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DIAGNOSIS AND TREATMENT OF CEREBROSPINAL LUES.*

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nervous system syphilis

It will not be the object of this paper to give a detailed discussion of the various forms of Central Nervous Syphilis, nor will any attempt be made to dazzle by detailing the different phases, such as Tabes, Paresis, Syphilitic-Meningitis, Erb's, Spinal-Syphilis, Neuro-Syphilis or Psychoses of different types, etc.

It is rather going to be our effort to simplify and attempt to rob Central Nervous Syphilis of some of the mysterious or vagueness, the "too late now" or "end of the row" feeling we often have when confronted with this condition.

Every case of syphilis which has reached the co-called secondary stage must be considered a potential C. N. S. candidate and so held until the spinal fluid is withdrawn and gives negative cytologic reactions.

We have learned that the treponema pallida many times makes its way to the brain and spinal cord very early; it has been demonstrated that there are several strains of treponema pallida, one of which seems to have special affinity for nerve tissue and apparently makes a "bee line" for brain substance; two other conditions must also be taken into consideration in the rapidity with which infection reaches the C. N. S.: (1) The resistance of the patient; (2) The virulence of the organisms.

One can readily see how a patient with a remarkably lowered resistance, and particularly virulent infection, may develop C. N. S. infection very quickly; it has been our lot to see three cases of distinct meningeal irritation with positive Wassermann, cell count increased and globulin plus three weeks after secondaries made their appearance; it is not at all rare to find positive spinal fluid Wassermann in the fourth or fifth month after infection.

Could I have chosen my subject I would have made it "A Plea for Early Diagnosis and Treatment," because therein lies the key to the successful treatment of this condition. In order to make a diagnosis as soon as possible we must divide it into two classes:

(1) Those in which there is rather acute meningeal symptoms (Syphilitic meningitis).

(2) Those which have a slower, more insidious development, ordinarily termed Central Nervous System Syphilis.

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(1) SIGNS AND SYMPTOMS OF SYPHILITIC MENINGITIS.

Subjectively. Intense headaches which are not relieved by ordinary measures is the most predominating symptom, sometimes nausea and vomiting.

Objectively. The signs of increased intra-cranial pressure, sometimes slight, Kernig's sign, often disturbances of the motor neurons, usually the lower neurons. Marked nervous irritability elicited most easily by the markedly exaggerated reflexes. Many others might be named, but these are sufficient to warratn a lumbar puncture.

(2) The latter and most neglected type, and because there is no recent history, no particular pain, the patient does not come to you and say, "Doctor, I have had syphilis and fear it has become central." He may have come complaining of anything from typical symptoms of gastric ulcer to tabes dorsalis. Only last week I called a consultation with an internist on a patient whom I knew had syphilis, because she gave such typical signs and symptoms of gastric ulcer, only to have the internist tell me her trouble was due to C. N. S. syphilis. Subjectively, the patient may complain of any symptom known to the category of human ailments, but one may rely on objective findings and you may with careful questioning elicit few or many of the following: headaches, especially at night, dizzy spells, diplopia, rheumatoid pains in back and legs—more or less difficulty walking in the dark, nervousness, fatigue—often complaining of being worn out at the end of the day's work, nervous irritability and often sleeplessness. Now we do not presume that should the patient have error of refraction and develop headaches he has lues, or if he has a clogged liver and has dizzy spells he has syphilis, or, rheumatoid pains; with several infected teeth. These things must all be excluded as matter of routine.

From the objective signs we strengthen our convictions very much and here, as before, there is no one or two symptoms that are pathognomonic but the preponderance of evidence on which we must rely.

The first and most constant sign is the irregular pupils, lopsided, look like a dime baseball that had been knocked around many times; they are unequal, sluggish in reaction to light and accommodation, a symptom pointed out by Graves, nearly always present but as yet no particular significance; that is, the peculiar varnished appearance of sclera with marked tortuous conjunctival vessels, arteries hard, P 2 plus, A 2 plus; bladder symptoms at this time may be expected, viz., too frequent urination with poor control or the opposite difficulty in starting, disturbance of coordination easily elicited by Romberg's sign.

Reflexes: The superficial are the first to disappear, in order named:
(1) Cremasteric, (2) Abdominal, (3) Conjunctival.

The knee jerk, ulnar, and Achilles are as a rule first exaggerated, then diminished, then absent. Definite areas of sensory disturbance reacting to the point of a pin; the first to show, ulnar border of forearms, outer surfaces of the knees —one need not go further into the physical examination than this because the laboratory is available and in my opinion can give us the most definite results on the spinal fluid of any of its works on syphilis.

LABORATORY FINDINGS.

As stated above, since every syphilitic is potentially a Central Nervous Syphilis subject we would urge that every case have lumbar punctures and Wassermann, cell count, globulin, and Lange's colloidal gold test made. It is not for me to discuss in this paper the relative value of the different tests, but I want to call attention to two facts, viz., that during the meningeal irritative stage and for a period afterward, the cell count and globulin are perhaps the most reliable. Later the gold chloride is by far the more delicate and reliable test for central nervous system lues, as well as a very marked aid in differentiating between the different types.

TREATMENT.

It goes without saying that this condition once determined demands active and

strenuous treatment, according to the extent of the affection of the central nervous system.

For some time after the advent of salvarsan, we were under the impression that we at last had a remedy which would penetrate all structures, but as time went on and central nervous system symptoms repeatedly occurred during and after thorough courses of salvarsan, we felt the need of something else or at least a better way to administer salvarsan.

Very soon there appeared in the Journals several methods by different investigators over the country. It is not our intention to go into a long discussion on the virtues of these different methods but to give you the results of those used by myself and from which we can draw definite conclusions.

Drs. Swift and Ellis were among the first to give us a method, the technic of which is familiar to all. After using this for some time we decided there was no use making a heterogeneous substance out of a homogeneous one; hence we modified the original to this extent:

Between 35 and 40 minutes after the intravenous administration of salvarsan, draw off about 40 c.c. of blood, which is immediately centrifuged in sterile tubes at very high speed and from which we obtain 15 to 20 c.c. of serum. The spinal puncture is then made and from 10 to 40 c.c. of spinal fluid withdrawn according to the pressure and condition of the patient. The undiluted serum is then injected into the dural cavity. We found that with this modification we apparently got all the good results without very much reaction. Very seldom did we have to use an opiate, to relieve pain, after treatment.

Results were apparent, every case yielding more or less to the treatment, but still there was the objection that we did not know how much salvarsan the patient was receiving in the spinal canal, so we appealed to a chemist who made quantitative estimates of the amount of metallic arsenic in the blood serum, showing that the serum contained different amounts, varying from 1-500 to 1-250 grain in one c.c. variation due to body weight of the individual. Thus we were able to a certain extent to regulate the dose.

The injection of metallic mercury into the dural cavity has come into quite general use, the most common form being the bi-chloride put up in normal horse serum. This has proven very efficacious, especially in those cases suffering from the direct invasion of the spirocheta pallida. Will cite two or three cases for demonstration:

Patient No. 40 came to the hospital suffering from complete paraplegia. Wassermann 1 plus; spinal fluid Wassermann, 3 plus; cell count 40 per cu. m.m.; nonne doubtful; leucocyte count 11000.

Patient was only able to get three doses of the mercurialized serum but at that time had gained control of both sphincters and was able to walk with the aid of a cane. Sensation in both legs and ability to move the feet and toes become possible after the first injection.

Case No. 3 Demonstrates the value of early *intradural treatment*.

Young man, age 22, contracted syphilis February, 1917. Three weeks after secondaries took treatment, was given four injections of salvarsan, and left the city; was away three months. Suddenly he began having headaches, which were worse at night; this continued for 14 days, during which time the patient came home and was treated continuously for migrane, neuralgia, etc., the only relief being from morphin; at this time patient came into our hands with unmistakable signs of intradural pressure. Deep reflexes were exaggerated. Superficial reflexes were diminished. Pupils irregular and uneven. Patient sent to hospital for lumbar puncture, with the following laboratory findings: Blood Wassermann 2 plus; spinal fluid Wassermann 3 plus; cell count 50; nonne-Appelt negative, increased protein content; leucocyte count 9000.

Patient was given mercurialized serum every seven days, until three injections

were given. Twenty-four hours after first injection patient's headache had greatly diminished and at the end of 48 hours had absolutely gone, but returned slightly about the sixth day; seventh day another injection of mercurialized serum given, very slight reaction and no recurrence of headache, nor has there been any clinical evidence since this time. The patient was given salvarsan intravenously at this stage and repeated every week until six doses had been given, and blood Wassermann at this time negative. Spinal fluid Wassermann 2 plus; cell count 3 per m.m.; nonne negative; leucocyte count 7500.

After third injection spinal treatments were given every three weeks until six were given, at which time all treatment was discontinued for a prolonged period. Clinically the patient is well; the laboratory signs are all negative except the Wassermann, which still gives a doubtful reaction.

Case 60. Typical tabes. Patient has been suffering from so-called rheumatism for past 16 years, has been to all springs and bathing places that his finances would permit, had all the classical symptoms of tabes. Dr. McGregor, of Mangum, made the positive diagnoses and turgor puncture which gave all the positive cytological reaction. The case was referred to me for treatment and he was given a mixed salvarsanized and mercurialized-serum treatment. Intradurally, the patient has had five treatments and claims to be cured, which of course he is not, but so far as subjective symptoms are concerned, he has none. No pains of any kind and is working from 12 to 14 hours a day.

It is not to be inferred that all our cases have such brilliant results, but as stated before, every case shows more or less improvement which is in direct ratio to the type and time of the case treated.

Bichloride of mercury mixed with the spinal fluid is very good but followed by very severe reactions and the patient does not seem to tolerate repeated doses very well.

CONCLUSIONS.

We have found that after a series of our 300 cases most dependable and gratifying results can be obtained by the intradural administration of mercurialized or salvarsanized serum.

That mercurialized serum is the equal, if not superior, in conditions wherein there is cell destruction due to the treponema pallidum.

That salvarsanized serum is superior in cases apparently suffering from the toxins of spirocheta pallidum.

The best results are obtained in cases selected according to their clinical types.

The earlier intradural treatments are begun, the more gratifying the results.

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VENEREAL DISEASE DISPENSARY.

An account of the organization of the venereal disease dispensary, including a report of the work done at the Illinois Social Hygiene Dispensary during and since the war, is given in the *Journal A. M. A.*, Nov. 29, 1919, by B. C. Corbus, Chicago. In the first year of its activities, the Illinois Social Hygiene League carried on an extensive educational campaign, which is still continued, including lectures, pictures, pamphlets and other literature. The work has been carried on among discharged soldiers and civilians, and there are now eleven specially trained physicians on the league's staff, besides the superintendent and clerks. A laboratory was recently established with one technician in charge. Frequent meetings of the medical staff are held to discuss treatment, etc., and a standardized technic has been adopted. Social workers have been employed, and various other methods evolved are given in detail. The dispensary occupies a two-story building in the north central section of the Chicago business district. There are fourteen weekly clinics held for both men and women, at hours arranged suitably for working people—some for charity patients and some for those who pay, the fees being regulated by the financial status of the patient. It is seen to that all are efficiently treated. There is always room for such work in large cities, and it should fulfil a useful purpose.

PATHOLOGY OF SPINAL FLUID IN CEREBROSPINAL SYPHILIS.*

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The normal cerebrospinal fluid has a slightly alkaline reaction, and contains a little over one per cent solid matter. It reduces Fehling's solution due to the presence of glucose. The protein which is found in traces in the normal fluid consists of globulin and albumose.

The small lymphocytes, which are the chief cellular constituents, number about eight cells per cubic millimeter. An increase in these cells is observed whenever irritation of the meninges is present. It is, therefore, found in all meningitides and diseases of the meninges that are primarily or secondarily involved in luetic processes such as tabes, cerebrospinal syphilis, and general paresis.

The Wassermann reaction is by far the most constant and delicate single test for syphilis, and whenever found positive, anti-syphilitic treatment should be given until the reaction becomes negative and remains so for a sufficiently long period of time. It has been proved that a single negative reaction is not ample evidence that a cure has been affected. It is, therefore, necessary that successive examinations be made during a period of two years and off and on during the remainder of life. The serum should be tested at least every six weeks during treatment and every six months or a year after treatment has been discontinued, for several years. The occurrence of a positive Wassermann reaction after treatment has been discontinued is an indication for its resumption.

It is only logical to consider cerebrospinal syphilis, tabes, and general paresis as originally one disease, each exhibiting peculiarities of distribution of the organism. The contention that these diseases cannot be distinguished from one another in their incipiency is a fact which must be admitted. But in watching the progress of these diseases we note dissimilarities. The cell count in cerebrospinal lues is, as a rule, high in the untreated case. The cell count in general paresis is under 100 —usually 60 cells per cubic millimeter. The Wassermann reaction in cerebrospinal lues is not always positive while in general paresis the Wassermann reaction remains positive. The characteristic feature of general paresis is a marked persistence of all serologic abnormalities. No matter how vigorous the treatment, the cell count rarely diminishes.

The purely cerebral distribution of the syphilitic process may show an acute or a chronic display of symptoms and a serology corresponding to the form of tissue change, meningitic, gummatous, or endarteritic.

The serology is greatly affected by the ease with which the spinal fluid receives impressions from the cerebral fluid. If there are obstacles which prevent proper interchange, some cerebral luetic process may escape the serologist. In a majority of cases, however, the meningitic form gives sufficient distinctive features to suggest some pathologic change. The gummatous form of cerebral syphilis affects the spinal fluid according to the depth of the infection in the brain tissue. The superficially located gumma gives serologic changes secondarily only by irritating the meninges, so we, really, are dealing with a mixed form of the disease, gummatous and meningitic. If the process is deeply situated, the study of the cerebral fluid will yield little evidence. The purely endarteritic form of cerebral lues, like spinal or cerebrospinal lues, rarely gives a pleocytosis, although occasionally a positive Wassermann reaction may be obtained in the fluid. The Wassermann reaction varies as does the globulin content.

As has been said, not infrequently is it hard to differentiate between cerebral lues and general paresis. Here the serologic differentiation is at times of great value. Even then the serology may so closely resemble that of general paresis that

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in order to establish a correct diagnosis it would be necessary to subject the patient to a course of treatments and watch the serologic changes. If the "Wassermann Fast" condition is obtained, we may feel sure we are dealing with general paresis. On the other hand, if the Wassermann reaction becomes negative, we may assume that the case is one of cerebrospinal lues.

The serologic evidence may not go hand in hand with the clinical manifestations but many months and in some cases years may elapse before clinical corroboration may be had.

In any case where there is a doubt as to the presence of general paresis we can clinch the diagnosis, if

1. A positive Wassermann reaction persists.
2. The cell count remains low, usually about 60.
3. The gold curve remains characteristic.
4. The globulin content remains excessive.

If the case appears to be cerebral lues, these conditions as a rule are found:

1. The Wassermann reaction will become negative comparatively easy after treatment.
2. The cell count which has been over 100 will be reduced.
3. From the beginning there will be no characteristic gold curve.
4. The globulin content, if present, will clear up.

The same characteristics are found in spinal syphilis to a great extent. The globulin may, at times, be present in great amounts. The cell count is low, but in the meningitic form the count may reach into the hundreds. The Wassermann reaction, as in the cerebral form, is positive in about 50% of the spinal fluids and about 75% of the serum. These figures apply only to the untreated cases.

All these factors constitute a valuable chapter in the clinical interpretation of syphilitic nervous diseases.

One other point I should like to bring before you is the use of the provocatory stimulation. In many cases of latent syphilis the administration of anti-syphilitic treatment, such as mercury or salvarsan, will convert a negative reacting serum to a positive one. In cases where lues is known to have been present or strongly suspected, and the Wassermann reaction is doubtful or negative, the administration of these drugs for a period of ten days or two weeks may show a positive reaction and thus show a latent syphilis requiring further treatment.

DISCUSSION:

Dr. C. B. Taylor, Oklahoma City: Mr. Chairman: Dr. Bolend very well said that every case of secondary syphilis should be considered potential nervous syphilis. If we are going to accept the theory that the organism of syphilis is distributed through the body by means of the blood stream, we must accept the theory that some of these organisms are carried to the central nervous system which is supplied by the same blood stream as the skin. So, if we have a case of secondary syphilis, we must have a central nervousness even though we get no manifestation of it. I think it is also true since the skin clears of the secondary manifestations, either with treatment or without treatment, that we must concede that the central nervous system will be freed of its infection, sometimes with and sometimes without treatment. A certain percentage of these cases, however, will not clear up. Those are the cases that give us later on our central nervous manifestations. A case of syphilis, in my opinion, that has gone or advanced as far as the secondary stage should never be discharged until examination has been made of the spinal fluid regardless of whether or not the patient has manifested any symptoms of central nervous disorder, and the findings from the laboratory on the vital fluids are of very great importance. We should get the centrostatic changes before we come to the subjective germs.

Quite often cases of central nervous syphilis can be proved up by the routine laboratory examination. When we find in the spinal fluid a cell count of over seven, a positive globulin, a negative or positive Wassermann, and the typical gold curve, we know we have central nervous syphilis that may in later years give trouble. We have no sure way of saying that it will. These cases may live on and die of old age without having any manifestations, but we are not justified in letting these cases go without treatment, and the treatment, Dr. Bolend has outlined. There is very little to add to the treatment as he has outlined it. Personally, I think I get as good results in these central nervous cases by creating a negative pressure in the spinal canal after the patient has taken a natural dose of arsenauro as when the arsenical serum is injected directly into the canal, or the salvarsan straight mixed with the spinal fluid, or in cases with the commercialized serum. I have a number of cases on my record sheets that show a rapid improvement of symptoms and a rapid change in the laboratory findings from simply doing the spinal puntcure after a series of salvarsan preparation and after the administration of a large dose of arsenobenzol; cases of tabes that have improved readily and cases of atrophied ———lessened from the beginning of the stage of atrophy simply by the——— of the fluid when the blood stream is loaded with the arsenic. Just how many of these treatments should be given is questionable. You will find the spinal fluid after the series of treatments to be practically normal; allowing an interval of three or four months to elapse and then doing another spinal puncture and withdrawing the fluid you will find the condition is returning while the patient has some subjective germs. I think, as Miss Campbell stated in her paper, these patients should have repeated examinations of the spinal fluids made perhaps for an interval of a year or six months for the balance of their lives.

Dr. Wann Langston, Oklahoma City: Mr. President, I would just like to say a word or two about laboratory findings. Because of the fact that the cerebrospinal fluid reacts very delicately, often very easily and often in a good many conditions very characteristically, it offers much of diagnostic importance in their interpretation. A great many tests may be performed on the spinal fluid, but four stand out over all others. With the possible exception of the colloidal gold, each has a distinct value if taken and properly interpreted one in the light of the other and in the light of the clinical manifestations of the disease.

The first I have mentioned and the one that I have found least dependable, because of the fact that we do not know what the normal is in the cell count. Frequently we say that the normal cell count is five; sometimes we say that anything below ten cells would be normal. In my observation I believe that one and a half is more nearly correct because of the fact that if we take anything below ten as normal we find our cell count negative in perhaps fifty per cent of cases.

The second that I shall mention is the Wassermann. The Wassermann test on the spinal fluid, when positive, is the most dependable of any of the tests. When negative, like all other laboratory results, it cannot be depended upon. The Wassermann is positive in perhaps sixty per cent of the cerebrospinal syphilitic conditions. It is not positive so far as I know in any other syphilitic condition.

The third is the protein contents of the spinal fluid. The percentage has been given as one hundred in cases of paresis, with other cases following closely. I think that is too high a percentage, and unless we are very careful in the interpretation we will be misled. If we use the modification of Mooney's test, which is conservative, in perhaps sixty or sixty-five per cent of these cases of cerebrospinal syphilis, whether paresis or otherwise, the test will be positive.

Eight years ago Laye announced the colloidal gold reaction and in this short time the literature has become very voluminous on these tests, and I believe that is the most important of all the tests of the spinal fluid. The technique, when you have the proper solution prepared, is so simple it can be carried out and the action and reaction is easily read and the different conditions in which you get the positive result are so sharply marked from each other that it is by far the

best test in arriving at a differential diagnosis that we have. It is positive, according to various authorities, in from fifteen to twenty-five per cent more than any other test that I have mentioned. The curb in paresis is definite; the curb in tabes and the other cerebrospinal syphilitic conditions is not so definite, but it always occurs within a certain zone, usually complicated by other conditions. This test is made so easily, much more easily perhaps than any of the other positive reactions mentioned, that it is a special advantage in that it enables us to find the first possible indications of cerebrospinal involvement; it gives us another advantage; it gives us from time to time an index of the patient's condition which will enable us to institute treatment at a time when proper treatment yields the best results. For these reasons I think it proper that the spinal puncture should be done and the colloidal gold test performed in every case of cerebro-tertiary syphilis.

Dr. Curtis R. Day, Oklahoma City: I think that Dr. Bolend has presented the best subject of any of us who have had papers in this section. It is the one that has excited the greatest interest of the profession for several years.

Along about the time that Dr. Erlich presented the profession in Germany with 606, it was my good fortune to be on the staff of the Hospital for the Insane at Norman. Shortly after the men of this state began the use of neosalvarsan, or salvarsan, there was a marked increase in the number of cases of paresis that came to that institution. They became so numerous that Dr. Griffin, the superintendent of that institution, wrote to the superintendents of various hospitals for the insane over the United States and invariably got the same report; they were having a marked increase in the number of cases of paresis in their institutions at that time. I believe that there was a reason for this, and I believe it was because treatment was instituted along clinical evidences as we usually find them, and as these were cleared up and no effort was made relative to the treatment of the cerebrospinal syphilis. It was all directed toward the one phase of the disease, and none at all was directed toward the treatment of syphilis of the central nervous system, as we are doing today.

Another very interesting thing at the present time is the difference in opinion among men who are doing an immense amount of work of this character in the various institutions in the United States. A short time ago we wrote to the men who had charge of the mental and nervous sections and had charge of the syphilitic sections in a number of the different institutions in the United States, asking two questions; one of them was, What results are you receiving from treatment of the central nervous system by the spinal puncture method? Are you using that to the exclusion of any other method? The answers we received from these men are of great interest, the majority of them saying that they are getting no better results from intraspinous treatment than they are getting from intravenous treatment. Some of them go so far as to say they consider it criminal negligence if intraspinous treatment is not used. So we find that these men in the United States who are doing this work—men of authority—differ widely in their views at the present time. Where doctors disagree, folks are free, so that some of us can stand on our own evidence and argue it from our own viewpoints.

Regarding the recovery or the apparent recovery in cases of marked syphilis of the central nervous system, a few years ago a merchant from a nearby town came or was brought to Oklahoma City, suffering from a marked case of paresis. Two or three days after he arrived, he became violently insane and immediately was transferred to the hospital for the insane at Norman. The gold curb was made and was positive for paresis. He was placed in that institution; had to be put under a retaining sheet; received no treatment whatsoever—absolutely no treatment of any kind. In due time this man recovered from this attack of paresis, returned to his home and transacted business, the same as he had been doing years before, only to return to the institution in the course of four or five months and promptly died from paresis. So we may have these cases that appear to recover, but in due time they die.

Dr. W. J. Wallace, Oklahoma City: Mr. Chairman, this is a most interesting

subject. I wish to compliment both Miss Campbell and Dr. Bolend on their papers. In this, as in other cases, prophylaxis should be instituted. We have involvement of the central nervous system in the very early stage, as mentioned by Dr. Bolend. I have seen cases somewhat earlier than he said. Even before that time, why we had certain nervous manifestations. So in the treating of the early stages, it should be pushed. Intensive treatment should be given from the first. These cases should be kept under treatment for a number of years—for two or three years, and an examination made from time to time. But following this intensive treatment, the spinal puncture should by all means be made in every case. It will not hurt your patient to do that and you will find according to some tests that we have made that almost fifty per cent will show an involvement of the spinal system, and then if you have a showing in this region you can give the combined treatment as outlined.

In the tertiary disease, when we have developed a showing of tertiary disease and the beginning paresis, and the other conditions that these cases show, they can quickly be given a negative Wassermann that amounts to practically nothing because maybe it is syphilis with its lesions of the brain or some other part, and the treatment should be centered on that condition in that particular region.

In these cases I simply give them salvarsan immediately; they all get potassium iodid until they are completely saturated; they get mercury, which is necessary; they get the intraspinal medication, which does not hurt them and undoubtedly can benefit them, and it should be given in every case and followed up from time to time depending upon the condition of the patient. Dr. Bolend makes it about seven days. Sometimes two or three weeks as a rule depending upon how they react until we get a negative spinal fluid and a negative interspinal pressure and a negative cell count, and then, if by that time the patient has been saturated sufficiently with the iodides we will institute some treatment with salvarsan and mercurialized serum given intraspinally as Dr. Bolend told you, which is a modification of the Swift and Ellis method. We began that several years ago. Dr. Bolend is the first man on record to our knowledge that made the modification from the Swift and Ellis method in that method as he outlined, and until only recently—I think the report came out in March in some of the text books or some journal outlining that method. But he began it while we were together. I was associated with him but had nothing to do with it. He begun and worked out that method of treatment which I think is undoubtedly superior in every way to the Swift and Ellis method, and should be given along with your intraspinal and your combined treatment. But the intraspinal treatment is better and will do your patient no harm, but you must follow it up from time to time.

Dr. J. Hoy Sanford, Muskogee: I wish to add a few things; to ask a few things. It is a pity that we haven't yet gotten standardized on the treatment of syphilis. Some are giving intraspinous; some have discontinued it; some are giving it intravenously and withdrawing the spinal fluid immediately afterward. Some are not even doing that. Now, the question comes up, haven't we put mercury and iodid aside sooner than we should have? Another question is—I believe we will all concede this though; when there is nerve destruction: I don't believe any of those treatments will do any good. Then, the question is: How are you going to determine, if you are giving intraspinous treatment or if you are giving intravenous treatment and withdrawing the spinal fluid, that this is beneficial to the patient, even if it helped the neurological centers—what have you accomplished? Take a man with tabes; it attacks a man and the spinal fluid is all positive. What good chance has the fellow got? Just to hear it said in the discussion of some man that he gets better; that he is walking around. What have you done for him? You have his blood examined and it is practically the same. Where do we stand? It looks like, with all the men in the country, that things would become more or less standardized. Mayos have discontinued intraspinous treatment. Others have taken it up recently. Some advocate the withdrawal of the spinal fluid immediately afterward, and others don't do that, and base the whole thing on

the blood test. Salvarsan's greatest feature is in the primary syphilis, made by the dark field, and pushing the treatment right off of the bat, and of course, following it up with spinal examinations. I believe that is the value of salvarsan today – in primary syphilis. It is very valuable in secondary syphilis, but you must support it with mercury and plenty of it, and in teritary syphilis the mercury and iodides are preferable. I believe, everything taken into consideration, all three together seem to be the ideal form. The only thing I can't get straight in my mind is with cerebrospinal syphilis, with nerve destruction, can you help that? On the other hand, with involvement and some nerve destruction, can you do as much to it with intensive treatment with mercury, iodides and salvarsan as you can with intraspinous treatments? Now, I am asking this for information. I have seen cases that had withdrawal of spinal fluid, and all of them do vary a little bit. Some of them have improved and some of them have not improved at all; you examine them then and you find the spinal fluid just the same. My belief is where there is neurologic involvement if you give him a treatment backed up with mercury and iodid and push the treatment, that you will do him as much good as you would with the other treatment, but if there is nerve destruction, though, none of them will do any good.

Dr. W. J. Wallace, Oklahoma City: Some five years ago a doctor in this state went to Mayo's for treatment. He had certain symptoms of central nervous syphilis. They made the spinal puncture. He was permitted to get up—a spinal puncture—and mercurialized serum and bichloride was injected—the man was permitted to get up and walk about three blocks to his boarding house. Shortly after reaching his boarding house, and with no instructions to go to bed, he developed a stroke of apoplexy, or I believe it was acute meningitis, and he was unconscious for about two weeks; the family were wired to come, his condition being so serious, but after a due course of time and rest he improved and was able to leave. Before leaving, however, they said to him, "Don't you ever take it again; you have a peculiar idiosyncracy; it is dangerous; it will kill you and under no circumstances ever take the intraspinal treatment." In time he called on us and we told him that we would be willing to risk it; that he undoubtedly needed intraspinal treatment; that from the intravenous route he would not get the effect of the medicine at the place that it was needed in sufficient quantity. We prepared for the treatment with his consent, sent him to the hospital we made our spinal puncture; gave the treatment intraspinally, the patient sent back to his room, instructed not to raise his head, not to get up for at least forty-eight hours; with absolutely no other reaction than the headache, he recovered nicely, returned home, and three weeks following that he took the treatment until four or five were given, much to the improvement of the patient with absolutely no bad effects whatever.

Dr. J. Hoy Sanford, Muskogee: I was not bringing out the bad effects of the treatment. I concede, I don't know whether it is particularly harmful or not. I would like to ask you at the time that you saw this individual what were his symptoms neurologically; I am not speaking of the laboratory; did the man present symptoms of involvement without nerve destruction or with nerve destruction?

Dr. Wallace: He had what we construed to be evidently some gummatous condition of the brain which responded to the treatment.

Dr. Sanford: How were his reflexes?

Dr. Wallace: He had all the characteristic symptoms, but the most pronounced that of involvement of the brain.

Dr. Sanford: Doctor, before we had salvarsan we had a lot of gummatous syphilis. I recall seeing a good many that under heavy iodides and mercury did very well. The question is, are they well, and is this man well? I am not against —don't misunderstand me—I am not against intraspinous treatment. I am trying to get information.

Dr. Wallace: The man is not well and never will be well, but he was treated with mercury.

Dr. Sanford: Could he have been treated by salvarsan intravenously and with heavy iodid and mercury?

Dr. Wallace: He had the iodid and mercury and he is still taking it.

Dr. Sanford: Could he have been treated in that way in your opinion?

Dr. Wallace: I think so.

Dr. A. M. Marshall, Chandler: In giving this intraspinal puncture my patients have never suffered very much inconvenience unless I made a little bobble. If I fell down, I think that I got a little bit of this bichloride of mercury into some of the tissues that caused some trouble to the patient when I went into it the first time, but after that I got the fluid without trouble and they suffered very little inconvenience and I decided it was the technique, if it caused any discomfort, rather than the treatment itself.

Dr. C. B. Taylor, Oklahoma City: In answer to Dr. Sanford's question, do we get any definite results where we have nerve destruction, of course, we don't regenerate any nerves any more than we grow a fresh one after it is cut off, but I do think we stop further destruction. I think that is a point we can all see. These cases of central nervous syphilis with nerve destruction that have continued to grow worse rapidly under intensive intravenous treatment combined with potassium iodid and mercury, we see those cases with their severe nervous symptoms rapidly getting worse—we see those cases arrested in three or four days time under intraspinous treatment. Even though we do no more than arrest the progress of that condition we have done a wonderful lot of good in my estimation.

Dr. Bolend, closing: I want to thank the gentlemen for the interesting discussion of my paper. It is true we are finding more paresis in the insane asylums; finding more paresis everywhere now; finding more paresis after we got salvarsan than before; but just say it is true, we are finding more of everything else. The more we know about a condition and the eariler we can diagnose a condition the more of it we will see. It is true, and it may be that it develops something like infeeted teeth and tonsils when the pendulum is over so far now that we are laying everything to infected teeth, gall-stones and the prostate. In the past four or five years the pendulum has been away up on syphilis and all phases of treatment of the central nervous system. I think that is perhaps a reason why the superintendents of the different insane asylums are finding more paresis is that they are diagnosing it earlier.

Somebody asked what results are you having from using this spinal fluid and this spinal treatment. I tried to make it plain that my paper was a plea a plea for the early diagnosis and treatment of central nervous syphilis. We are not talking about general paresis or advanced cases of locomotor ataxia. But as a matter of fact I have seen cases that I think were unquestionably general paresis and other well advanced cases of brain syphilis and locomotor ataxia—and only the advanced cases failed to respond. About fifty per cent of them. We never tell a patient, you are going to get well of locomotor ataxia. I say, I think we can stop the progress of your disease and keep you from getting worse. Now, some of them have gotten somewhat better or a little better; some responded nicely. I can show you cases that have responded miraculously; some of them slowly; some of them don't make much progress, but we are able in ninety-eight per cent of the cases of tabes, I think, to stop pain and to keep the disease from progressing. If you can do that, it is worth while.

For the past ten years neosalvarsan has been given just about as hot and heavy as the doctors were able to pile it, and the cases of tabes and general paresis have gone ahead and developed. Is it going to take us ten years more

to know whether or not the intraspinous treatment is going to be of lasting and beneficial result, whether it is going to cut down general paresis or tabes?

Somebody asked me if the results are any better than they were with the ordinary intensive treatment. All we can say to that is at the present time in the intensive treatment the doctors use the mercury as fast as they know how to give it and I think from the initiation they have pushed it as hard as they can along with the iodides; then they finally got to injecting it into the muscles. There are ways and ways of pushing, but the doctors have kept the system pretty well saturated where they have the co-operation of the patient. Still a large amount of paresis and tabes have developed. I want to get off of the subject of paresis and tabes. It is not the subject of my paper, but it has been brought out. It is going to take a few more successful and well directed intensive treatments and about ten years time before we can get the beneficial results and before Dr. Sanford's question can be answered.

On the proposition of doing the spinal puncture. It should be done immediately after or as soon after the injection of a large dose of salvarsan and mercury intravenously and is the most logical thing I know. I haven't any suggestion to make on it only in one or two cases I have tried with Dr. Wallace to find some evidences of something in the spinal canal. We didn't do any real work on it. In one or two cases we tried to find in one day or two days or maybe a week later some evidences of arsenic or mercury in the spinal canal, which we didn't. There are a thousand places for error, but it has occurred to me pretty much like this; why take the whole fire department to a fire; send the chemical wagon to put out the fire. You have your treatment into the spinal canal and the work has progressed to where these drugs can be given with impunity; there is not any very severe reaction if it is not too powerful and it can be done with only the loss of forty or fifty hours time and I believe that the reaction from the ordinary lumbar puncture is just about as severe, especially where you withdraw lots of spinal fluid, and for my part I am discontinuing that and talking against withdrawing large amounts of spinal fluid.

It is hard to get a sufficient number of cases in a short space of time to demonstrate the different facts clearly on the differential symptomotology so as to answer the questions that have been asked this afternoon. If anybody happened to have seen us in the University hospital the other day—there were only two cases, but it demonstrates thoroughly the conditions asked about today. Both cases have been under constant observation for four weeks; both cases have had mercury as fast as they could hold it; they have had potassium iodid as fast as they could be given it; one has been given thirty-eight drops, and the other forty drops three times a day; each has had a dose of salvarsan weekly. We were able to show these cases. The lumbar puncture was made two weeks ago and we had cytologic finding, yesterday we repeated the procedure. They are better now. I don't know now what the final reading was but it started out as typical a curb as it was originally and I don't know whether they will want us to go four weeks or four months or four years, but I am sure of one change.

Dr. Cecil: The final readings were approximately the same during the whole time?

Dr. Bolend: That is the final reading. Now, it might be that four weeks more would make a wonderful change. The man had the lumbar puncture early. Of course, that is not after each treatment by any means.

In regard to the frequency of the treatment, that was brought out in one discussion. It was only in case of acute meningitis with marked symptoms and headaches, etc , where we give this treatment so fast. I don't want anyone going away thinking as a routine we give mercury and arsenic into the spinal canal every week. Usually it runs from twenty-five to forty days in every case of early syphilis of any kind; if tabes, or anything else, about twenty-five to thirty days,

and in this case cited the man had acute meningitis and marked symptoms which disappeared. There were no ill effects from the mercurialized serum.

A question was asked about the size of the dose; in regard to the size of the dose of mercury or salvarsan into the spinal canal, it depends on your patient and on his resistance and how your patient progresses. If he progresses nicely to a certain point and doesn't do well further on, it is possible you are giving him either too much medication or too little medication. If he is progressing nicely and is doing fine except he does not go further, then you can assume that you are not giving him quite enough medication In commerce only two sizes are put up, containing about one twenty-fifth of a grain of bichloride of mercury. It is hard to guage the amount of arsenic you are putting into the spinal canal. You could give a man too much arsenic If you give a big, fat man with lots of blood the serum, it will not contain as much of the arsenic as if you were giving the salvarsanized serum to a man of my size. So, the thing that has to be done is reinforcement; that is, reinforcing the man with a small quantity of the salvarsan added to his already made salvarsanized serum and the reports state that that is done without any ill effect. However, in a few cases infinitesimal amounts of arsenic directly into the spinal canal give rise to serious results. But by using this neo it won't kill a patient. With the salvarsanized serum you may add to as high as a twentieth grain of arsenic to his already salvarsanized serum—I am not positive about the amounts. They are marked. You can do the same way in making your own mercurialized serum and adding to the bichloride the serum made from the blood of your patient.

You speak about the physical signs—the high cell count. I am coming to the conclusion that perhaps a phenomena may sometimes develop and give us two kinds of cells in the spinal fluid; maybe a large cell that has some pathologic action different from the mere phagocytes found in the blood. If that is the case, it merely shows an increase of the phagocytes in the blood because the white cells are attempting to do the work they were intended to do. So I don't know that it worries me to see an increased cell count if all the other symptoms are abating. Will mercury reach the spinal fluid? I think what I have said answers that part of it as far as I know. And with the blood negative and the spinal fluid positive, is it better to give neo or mercury? That brings up the old, old question again as to which is the better remedy in syphilis, whether it is brain syphilis or systemic syphilis. Most of us have been in the army. I would like to make it like this. So far as the treatment of syphilis is concerned, in regard to the mercury, salvarsan and potassium iodid, I would like to call the salvarsan the heavy artillery, the mercury the infantry, and the iodid the signal corps and the engineers. You can't win a war with artillery and you also know that no infantry in the present day can win a war, and you can't get anywhere without your signal corps and your engineers. I think it is just as absurd to try to treat syphilis without mercury as it is to try to win a war without infantry; I think it is just as absurd to try to treat syphilis without salvarsan of some sort as it is to try to win a war without artillery and so with the iodides. Such a patient as won't yield to injections; such cases as won't yield to internal mercury, often will yield promptly to intraspinous injections. These things are all supposed to be taken into consideration. I don't feel that we should waste our time in arguing these idiosyncrasies.

I have said all that I have to say to you, but there is one point I wish to bring out in regard to Dr. Sanford's question; when do you know that a patient has the syphilis, what in the end is the result. From a simple standpoint Dr. Dr. Sanford's remarks are woefully and lamentably true. To a large per cent of them we can say you will live as long and get along as well and your family will be as good as if you never had had the syphilis. But there is a percentage that do resist all treatment.

On the other hand there are some well known authorities who think that it is criminal to try to reduce the blood Wassermann or the spinal

fluid Wassermann with intensive treatment, or attempt to do it. Engman, of Saint Louis, Pussey, of Chicago, or Graves, of Saint Louis, wouldn't any more attempt to intensify the treatment than to do any other absurd thing. They would consider it absurd. Now, we can laugh at these fellows, but there is truth in what they say. Their contention is this: if you can reduce your patient's Wassermann to negative and cure him with your treatment in that way, all right; you are lucky; so is your patient; but to do it at the expense of his kidneys, his heart and his brain; in other words, which are you going to do, cut off ten years of his life here or cut it off there; which end of the road are you going to cut it off. They think that you are doing your patient untold harm by giving your patient such intensive treatment. In other words, it is the same old story. You have got to keep the resistance of your patient up. Where you tear down his resistance—anything that is going to tear down his kidneys, lungs, stomach or spleen is wrong. I think most everybody will agree that if you can reduce the patient's subjective symptoms, make him comfortable and help him to be a useful citizen that you have accomplished a great deal. Now, as far as I can see I believe that that is the extent of what you do and I believe that that is doing a great deal. If you do reduce the subjective symptoms and make him comfortable and a useful citizen you have done more than has ever been done before, and you are keeping the insane asylum from filling up and are helping society in general.

Now, the other question is, in cases of syphilitic meningitis, is the intensive treatment just as good? I don't know. I haven't had enough cases to attempt to do it both ways to know. I can't answer that question.

Dr. Sanford: I didn't ask that question of what good did you accomplish by such methods as intraspinous as compared with purely intravenous injections of mercury and serum. I asked the question, Were there any better? I believe it is a great thing. I listened to it because that means a whole lot. I didn't ask it from that standpoint, Doctor; I just asked, did you accomplish more by intraspinous puncture and withdrawal of the spinal fluid following than you did the other way, just as a matter of information. I believe Dr. Wallace misunderstood me. I was asking for information on that case of yours, Doctor—not criticism—I wanted to know, because I do know I have been trying to settle my mind about the standardization of the treatment of syphilis, and I can't do it, and I was asking for information.

SPECIFIC NATURE OF HEMOLYTIC STREPTOCOCCUS OF SCARLET FEVER.

Studies of the specificity of the hemolytic streptococcus in scarlet fever, especially in regard to opsonification, since agglutination of streptococci is uncertain, are reported by Ruth Tunnicliff, Chicago (*Journal A. M. A.*, May 15, 1920). Hemolytic streptococci, obtained from various sources were used. Of the hemolytic streptococci isolated from the throat and the complicating lesions of early cases of scarlet fever, all gave marked phagocytosis with the immune sheep serum except two mannite fermenters, the point of opsonic extinction being from 1:30 to 1:1,500, 1:150 being the point at which phagocytosis ceased for the majority of the strains. None of the hemolytic streptococci isolated from the throat late in scarlet fever, except in instances noted, and none from sources other than scarlet fever, were opsonized by the immune sheep serum in dilutions higher than by normal serum; and none of these cultures were agglutinated by either normal or immune serum. Hemolytic streptococci obtained from the throats of nine patients during convalescence from scarlet fever, one during the second, the others during the third and fourth weeks, were not agglutinated by the immune serum and not opsonized in higher dilutions than with normal serum. The results so far indicate that the hemolytic streptococci isolated from the throat at the onset of the attack of scarlet fever are immunologically different from most of those obtained during convalescence, and that some of the hemolytic streptococci in complicating lesions may differ immunologically from the streptococci in the acute stage of scarlet fever. These results also suggest that immune sheep serum may be helpful in diagnosing suspected cases of scarlet fever and in determining the length of quarantine for patients with purulent discharges. Absorption experiments indicate clearly that the hemolytic streptococci that prevail in the throat in the acute stages of scarlet fever form a group immunologically closely related and apparently peculiar for scarlet fever. Possibly the serum produced with this scarlatinal streptococcus group may prove of use in the diagnosis of scarlet fever, and eventually, perhaps, in determining the length of infectivity.

OBSTRUCTIONS AT THE BLADDER NECK.*

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I have chosen as the topic for discussion, certainly the most important one in urology and indeed one of no small significance to most of you as general practitioners of medicine. Since such a goodly proportion of male individuals beyond middle life are afflicted with prostatic involvements (and this has been estimated at about 30%) and since about 50% of these seek relief because of symptoms of such obstruction, it naturally offers itself as a problem of general interest. I dare say that as the public becomes cognizant of the fact that aberrations of urinary function are not natural consequences of age to which they must become reconciled, but are representative of definite physical changes which are usually remediable, this percentage will grow appreciably higher; and the whole problem therefore reverts to you as practitioners, to educate the public along these lines in order that they may be guarded against disastrous consequences of late obstruction, and oftentimes protected from major surgery. It is for this reason that I wish to bring this subject before you, and I trust that I may be pardoned if I am rather elementary in the description of the progress of the pathological changes and their resultant symptomatology.

I shall assume that most of you are familiar with many of the changes around the bladder neck consequent upon some of the more common pathologcial abnormalities, but let us refresh ourselves with some of the most typical findings and symptoms. Let us divide the obstructions at the bladder neck into two main classes; the mechanical and the neurological. The great bulk of mechanical obstructions result from changes in the prostate itself, either adenoma, carcinoma, sclerosis, or calculus. Other rarer obstructive conditions are papilloma, or carcinoma of the bladder, obstructing the orifice with either villi or clots, bladder stone, diverticula, cysts, urethral polyps, etc. The second group, the neurological, has as tabes its most important exponent, although numerous other diseases of the central nervous system may be productive of the same changes.

As you know, the prostate is primarily a reproductive gland, situated around the neck of the bladder between two important muscles, the external and internal sphincter, which have to do with urinary control. It is composed primarily of five gland groups, the anterior, two laterals, a median and a posterior. With increasing age the anterior lobe is replaced by fibrous tissue and forms what is known as the anterior commissure of the prostate, and only occasionally contains gland elements. The two lateral groups of glands later form the lateral prostatic lobes on either side of the urethra. The median group of glands produces the so-called median lobe, situated between the ejaculatory ducts and the floor of the urethra. The posterior lobe caps the two laterals and is beneath the ejaculatory ducts, next to the rectum. Aside from these gland elements which in later life are productive of mechanical changes around the internal orifice of the bladder, there are other gland groups within the internal sphincter and under the vesical trigone. These are submucous glands which may in later life bear an important significance to changes around the orifice.

As has been previously stated, about 30% of individuals past middle life and some individuals even earlier, suffer from pathological processes originating in these gland elements, the most frequent involvement being a proliferative process forming what is commonly termed prostatic adenoma or hypertrophy; the next most frequent being malignancy, this comprising about 20% of all enlargements; and the

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third in order of frequency being the sclerotic changes either in the prostate or suburethral glands due to inflammatory processes. Whether the bladder neck is involved in one or another of these pathological changes, the mechanical result back of the obstructions is practically the same, that is, obstruction to the urinary outflow with resulting back pressure upon the bladder and upper urinary tract. The chief factor is the interference with the sphincteric mechanism of the bladder.

As the obstruction proceeds, whether it be a large hypertrophy or a small tight sclerosis, there is at first a call upon the bladder musculature to compensate for this increasing resistance; as a consequence the bladder wall becomes thickened, the muscle bundles hypertrophy, forming what is commonly known as trabeculation, which in turn induces a distortion of the orifice and an abnormality of the bladder contour. As the obstruction increases, the bladder wall being the point of least resistance may be finally forced beyond its capacity and undergoes broken compensation. With this there is a thinning of the bladder wall, dilatation, enfeebling of the detrusor musculature with the gradual development of an increased residual urine. Because of this last condition infection is likely to ensue, stone formation and inflammatory processes are quite common and pouchings and abnormalities of the bladder wall are frequent sequelae. But these changes in the bladder itself are not the important ones in vesical obstruction. With the increasing intravesical pressure, the kidneys are called upon to empty themselves against an abnormal resistance. This is soon productive of dilatation of the ureters and kidney pelves with a subsequent hydroureter and hydronephrosis and in the presence of infection, pyelonephritis and pyelonephrosis. These obstructive changes in the kidney are *the* serious changes in vesical neck obstruction, and those which offer the real danger to life, those with which you must be thoroughly acquainted.

SYMPTOMATOLOGY.

The symptoms produced by these pathological changes may be classified as local and general. Usually the first symptom that such individuals have is *frequency of urination*, particularly nocturnal. It may be well established as a working basis that an individual past middle life who has to get up at night once or twice is beginning his prostatism and it is here that you must exercise your best influence so that later changes may be avoided. The symptoms of frequency which are at first those of irritation are soon followed by *difficulty* and *hesitancy*. These symptoms are usually progressive and are then aggravated by the increasing residual urine, so that the patient at this point begins frequent voidings because he does not empty his bladder. As this goes on, the most serious local clinical symptom of prostatic obstruction is likely to occur, namely, *incontinence of urine*. This is the second clinical sign to which I wish to call your attention. The impression seems to be prevalent that incontinence is usually the result of irritation, when really it is almost universally secondary to a lack of sensation. I wish you to understand that a bladder rarely leaks unless it is full to overflowing and that we seldom meet with an incontinence except of the paradoxical overflowing type. It means that when patients are in this condition their ureters and kidney pelves are dilated with the bladder and that a low grade uremia has set in.

In my series of 485 cases of prostatic obstruction which I have studied a fair percentage of the patients consulted us with such incontinence. Because of the fact that patients have been taught that increasing frequency of urination is natural, we rarely get them early unless they are fortunate enough to have some complication in the bladder which will protect them against these late involvements. Of these cystitis and calculus, both of which produce pain and suffering, are the most frequent accompanists of early obstruction, and serve as alarm signals to the patient which may bring him to an early diagnosis. *Hematuria* is equally frequent in benign and malignant growths. *Retention* of urine, either intermittent or permanent, is self-evident.

There are usually no constitutional symptoms in early obstruction unless there be infection. But in the insidious, gradually increasing obstruction, with

incontinence there are two important symptoms to which you must be alert—the cerebral and gastro-intestinal, which occur as manifestations of uremia. Early morning nausea and vomiting in an elderly man who has never previously suffered from stomach disorders is highly suggestive of obstructive uremia, although many of our cases have been treated for pyloric stenosis and cancer. The cerebral indications which are usually running mates of the gastro-intestinal disorders are drowsiness, headaches, and occasionally mental wanderings. These two groups of symptoms must always bring to your mind an apprehension of uremia. Chills and fever frequently occur and are almost invariably the result of kidney involvement due to back pressure from obstruction.

Other common symptoms are the reflected pains, backaches, sciaticas, pains in the perineum and hip. These are less frequent in benign obstructions but are often the earliest symptoms of malignancy or central nervous system disease. Indeed cancer of the prostate and seminal vesicles frequently has as its only symptom of importance pain in back or hip. I wish to impress upon you the significance in the elderly patient of this almost pathognomonic aching pain in the hip joint. Diseases of the central nervous system commonly have bladder disturbances as their initial symptoms. In 500 cases of the disease of the central nervous system which one of my associates, Dr. Greditzer, and I studied and reported last year at the American Medical Association, over 40% consulted the urological clinic first, not realizing that there was any general nerve disturbance. These urinary symptoms are often identical with those due to mechanical obstruction but can be easily differentiated by methods which we will discuss under diagnosis.

DIAGNOSIS.

Urology has developed in the past fifteen years into one of the most exact branches of medicine and the trained specialist owing to the facilities he has at his command is seldom at a loss in making an exact diagnosis. An exact diagnosis is absolutely essential in order that the best results may be obtained. From you as general practitioners of medicine such diagnosis cannot be expected, this is for the special field of urology. You can, however, by clinical methods often get a fair idea of the nature of the trouble. The great mistake that I have seen is that for bladder symptoms, patients are so frequently given urinary sedatives without any attempt at investigation. This practice I strongly urge against, since it is so frequently responsible for the serious results of which I have spoken. If you will realize that such symptoms are indicative of mechanical or true nerve lesions, and not habit or irritations from primary changes in the urine, such as hyperacidity, and will make a rectal examination in order to palpate the condition of the prostate, and catheterize your patient carefully to determine the presence of retention, examine his nervous system and blood, you may be able to get a fair estimate of the true condition.

The adenomatous prostate is large, firm, smooth, and elastic. The carcinomatous prostate is usually small, hard, and irregular. If it develops in a pre-existing hypertrophy, it is usually as a hard lump in an otherwise smooth gland. Indeed, any hard lump in the prostate of a man beyond fifty years of age is generally cancer, sometimes stone. And since cancer occurs in about 20 to 25 per cent you will help in curing many of this disease by sending them for early treatment to your specialist as soon as this finding has been obtained. In the rectal examination it is very important to observe the tone of the rectal sphincter, since relaxation of the rectal sphincter is one of the very early findings of central nervous system disease and in this way you may protect the patient against surgery to a prostate that is innocent of involvement, the real lesion being that of the central nervous system. In about 10% of these cases, prostatic hypertrophy and disease of the central nervous system occur together. Do not forget, however, that the inability to find a large prostate per rectum does not rule out prostatic obstruction, since a median lobe or a contracted neck may be present in the bladder without the slightest palpable enlargement by rectal examination. Your chief decision here is made

by the amount of urinary retention as determined by catheterization and the finding of a normal nervous system. The rest must be determined by the cystoscope.

In suggesting to you the catheterization of your patients, I should insist that you be very careful in your technique. Infection is very common, in fact more common than proper. It will not occur if the anterior urethra is irrigated before catheterization to eliminate the bacteria which are normally present; if a sterile catheter is put in gently without trauma and the bladder is instilled with an antiseptic solution following catheterization. A great stumbling block seems to be the urinalysis. The kidney impairment and uremia due to mechanical obstruction have nothing in common with nephritis. As I have said before, it is pressure atrophy of the kidney. The urine of such individuals may be perfectly clear, with fair specific gravity and no albumin, and yet the patient be on the verge of uremia. Usually the cases with a clear urine are the worse type. The appreciation of the importance of retention from mechanical obstruction has been the greatest factor in bringing prostatic surgery within safe limits. The amount of residual urine that one gets with a catheter is far more important in this type of case than the urinalysis. Having arrived thus far in the diagnosis, it is then for the specialist to decide the exact character of obstructoin, and the quality of the kidney cortex. This is done by the refined methods which we are fortunate enough to have. The cystoscope will tell the type of obstruction, whether mechanical or neurological, and will delineate the exact nature of the mechanical obstruction with the accompanying processes in the bladder. And it is certainly true that no one should attempt prostatic or bladder surgery without a careful cystoscopic investigation of the interior of the bladder.

Since 10% may be nerve lesions, a fair percentage may be a coincidental cancer of the bladder, a diverticulum or other serious pathological changes; and these must be absolutely established before any surgery is attempted in order to obtain reputable results. If this accurate diagnosis is made, the results in prostatic surgery are extremely satisfactory. One can with the cystoscope absolutely diagnose nerve lesion; in the 500 cases which we have studied we have been able in almost 100% to differentiate it from other types of obstruction and in many cases saved the patient from surgery.

The cystoscopic findings consist of a dilatation of the internal sphincter of the bladder, so that the whole posterior urethra may be inspected, showing the verumontanum, ejaculatory ducts, etc. With this dilatation of the internal orifice there is trabeculation of a delicate type which is often very characteristic. This combination of trabeculation of the bladder without obstruction at the neck is the characteristic picture of central nervous system disease.

Having determined that the condition with which we are dealing is a surgical one, it is then absolutely essential to have a thorough appreciation of the patient's general status by a careful examination of his cardio-vascular, nervous and renal mechanisms. Of these the last is by far the most important. The majority of such individuals have cardio-vascular disturbances, particularly myocarditis, arterio-sclerosis and high blood pressure, but unless these are extraordinary they do not afford a contraindication to surgery. Rest in bed, correction of absorption, relief from renal embarrassment and regulation with cardiac remedies usually make such lesions safe for operation; in fact, operative measures in this present day add but little strain to the cardio-vascular system. In my experience it has been rare to have cardio-vascular complications following bladder neck operations and several such operations have been done on post apoplectics. Patients with nerve lesions are extremely bad surgical risks and should not be subjected to major surgery if there is another way out; as a rule, you obtain only a very indifferent result locally, and the general condition of the patient is but little if at all improved, if he survives.

By far the most important factor of prostatic surgery is a safe kidney function, and an adequate understanding of the limits of the "renal safety zone" does more to make such surgery effective than anything else. The determination of this

zone for the individual is really quite accurate if one will utilize the tests which are available and take time to study the results. By this means only can the operable and potentially operable be separated from the inoperable cases.

The amount of residual urine has a great bearing on prognosis. Experience has taught us that a high residual urine from its pressure destruction makes a relative contraindication to surgery. Indeed, the most deceptive type of case is the man with a high residual, uninfected urine who appears to be in good physical condition. He has not gone through the vaccination from infection and often has not the capacity to tolerate simultaneous absorption and change of pressure from relief of the obstruction.

The total twenty-four hour urine and its specific gravity give us a good general clue to renal capacity, but either alone is of no value. The most reliable test for kidney function is the phenolsulphonephthalein test. This dye test with which you are all familiar seems to represent very accurately the amount of elimination of solids that a kidney is pefrorming at a given time. There are, however, a great many misunderstandings about this test and it is often unjustly criticised.

Phthalein cannot be expected to foretell the exact future of an individual; it can tell only the immediate condition. It is also influenced by absorption from the tissues. In many of these elderly patients with toxic changes and poor circulation the dye is not brought to the kidney on account of delayed absorption from the tissues. Under drainage its elimination will improve when absorption improves. If a kidney is suddenly relieved of pressure it naturally suppresses. Such a kidney may have given a fair phthalein under its customary tension. This has been the most frequent misunderstanding about the test. If it is followed repeatedly and carefully I must say that I have seldom seen it fail to represent the true condition.

Study of the blood chemistry is very essential in order to determine the products of retention due to renal insufficiency. The nonproteid nitrogen gives us our best general index. Normally it is 23 to 26 mg. in 100 cc. of blood. Often in these uraemics it is over 100 mg. Here again one examination is not sufficient. Repeated tests along with phthalein must be done in order to get the stable standard. If in summarizing these tests we find them within normal limits and the patient is in good clinical condition without a high residual urine, he is ready for surgery. If not, an attempt must be made to put him in condition. This is done by a careful preliminary preparation and constitutes a most important chapter of prostatic surgery.

The two principal factors in preliminary treatment are drainage and elimination. Patients with residual urine should have a retention catheter inserted, fastened in and corked. They are instructed to empty the bladder every few hours, and should receive bladder irrigation twice daily. The catheter is changed every three to five days. The patients may be up and about and on the whole are but little inconvenienced. To institute ample drainage they must be given water in large quantities, every hour or oftener, and if uraemic a hypodermoclysis or rectal tap. The bowels are kept free but not purged. Urinary antiseptics, particularly acid sodium phosphate and urotropin should be prescribed. Good, nutritious food is essential and tonics are sometimes serviceable. Caffein is frequently of great value; it not only stimulates their general tone but also increases kidney elimination.

This preliminary treatment should be continued until the patient seems safe and no surgery should be done until he does. The period of preparation may extend from one week to several months. I should urge against suprapubic drainage as an immediate preliminary procedure; it is often too hazardous, causing too sudden change of renal pressure and adding a surface for absorption; furthermore, the patient may be incapable of response and is then in much worse condition than when on catheter life. I have seen but few patients improve under suprapubic drainage who would not on a catheter, provided they were given sufficient time.

Throughout this course of drainage and treatment the kidney function must be determined each week, that is by phthalein and blood nitrogen tests, as well as the total output of urine and its specific gravity. During this period the patient's general health must be carefully observed. When he feels better and is stronger, when his appetite improves and his color comes back, when the blood nitrogen is stable, though it may be high, and the phthalein is constant, though it may be low, he is ready for surgery. If he does not improve he should be put on catheter life because surgery will certainly kill him. The removal of the prostate is done only for relief of obstruction, and if there is no improvement with catheter drainage we cannot hope for surgical relief. The question of mortality therefore absolutely resolves itself upon the wise choice of surgical cases, and can be reduced to five per cent or under.

As soon as the patient appears to be a safe risk, we are ready for the surgical attempt at cure. I shall spare you a detailed account of the surgical procedure but will briefly outline some of the more important phases. Let us dispose of some of the rarer obstructions: bladder papilloma, causing obstruction with villi or clots should be treated with high frequency through the cystoscope, never by open surgery. The results are incomparable. Carcinoma of the bladder demands either radium or surgical removal or both, depending upon the location and type of growth. Bladder calculus if not associated with large intravesical obstruction may be crushed by litholapaxy. This is the safest method and extremely effective. Cysts and polyps may be removed by endovesical methods.

Let us now turn our attention to the surgery of the prostate. For benign growths of the hypertrophic, adenomatous type, major surgery is indicated, either suprapubic or perineal prostatectomy. These are both very satisfactory operations provided they are executed properly. There is no argument that one or the other is better suited for the adenomatous prostate; it is purely a question of individual preference. The perineal operation is one of the most beautiful and technical operations in surgery and when properly done gives exeellent results. The argument that incontinence and fistulas are frequent complications is unwarranted. These may so occur in unskilled hands, but seldom in trained ones. It is hard to produce incontinence unless one is operating on a patient with a coincidental nerve lesion. This is the explanation of the usual incontinence; incomplete relief of obstruction may leave incontinence or fistula but this should seldom occur.

There are only three arguments as I see it that can be brought against a perineal operation. The first is that so few can do it; the second that recto-urethral fistula occurs even in skilled hands and is a serious complication although by the Young-Stone operation it can be cured; and the third is that the sexual powers seem to be a bit more disturbed than by the suprapubic method.

The suprapubic operation is naturally the more popular one owing to its simplicity of technique for this type of obstruction. I am decidedly opposed to a single stage operation since it offers too many serious problems at one time. The change of pressure, absorption from drainage, hemorrhage and anesthesia occurring at one and the same time make the operation too dangerous and the mortality is about twice as high as in either the perineal or the two stage suprapubic.

The two stage operation is an excellent one in that it separates the serious problems of prostatic surgery and does not shower the patient. The first stage is done under local anesthesia and the bladder is drained. There is rarely a drop of leakage around the tube, so that absorption is lessened and the patient is but little disturbed, provided he has had proper preliminary treatment. This operation not only walls off the suprapubic space and fascia from infiltration but gives thorough drainage and allows engorgement around the prostatic orifice to subside. When the patient is again in condition, and this is usually in about a week, the second stage operation is done through the previous opening. It is best executed by an intra-urethral enucleation under either gas or sacral anesthesia. This part of the operation takes but a few minutes of time. It has been my custom to insert a Hagner bag in the orifice to control bleeding; to take a few sutures to close the upper part of

the abdominal wound and leave the lower part open without tube drainage. The wound is smeared with stearate of zinc to make it water proof. I can see no reason for a tube drain since the tissues are walled off and such drainage only invites necrosis. With these procedures it is rare to see sloughing wounds; they usually heal clean.

Should there be an ammoniacal condition the application of Bulgara bacilli will promptly eradicate it.

Carcinoma of the prostate offers many problems. I am confident of one thing; that a suprapubic operation should not be done as its results are not nearly so satisfactory as by the perineal route. Recurrences are more frequent and the result not nearly so good. It is my practice to use radium by embedding it in the prostate either through the perineum by needles or implanting it in the capsule after surgery.

For the contracted neck or median bar formation which comprises nearly 20% of obstructions, the intraurethral operation is the one of choice. Such cases seldom require major surgery. Since Young, of Baltimore devised his punch in 1909, men who have used this instrument have obtained excellent results. The chief obstacle to the popularity of the procedure has been the frequency of hemorrhage and absorption from the raw surface. Usually local anesthesia has also been inadequate. For these reasons I have recently devised an electric cautery punch which I shall show you and have also employed a novel method of infiltrating the bladder neck with novocaine under direct vision through the endoscope. I have felt that these obstructions should be burned to protect the patient against both hemorrhage and absorption. My results in the last three months since using this instrument have justified its construction. I have done twenty cases, all of them in the office under infiltrative anesthesia. There has been not the slightest complication; not a single one has had to be treated for hemorrhage or clots and at most there has been just the slightest staining of the urine. Our immediate results have been excellent. The late results of this type of operation are very satisfactory.

In summarizing I should say that with an accurate diagnosis whereby the exact type of obstruction is understood; careful investigation into the patient's general condition; a thorough preliminary treatment to relieve uraemia and to restore kidneys which are capable of resuscitation and eliminating the ones which are not, a careful perineal or two stage suprapubic operation done at the proper time, with vigilant after treatment, will give results comparable to any type of surgery, with a mortality that should not exceed five per cent.

723-32 University Club Building.

PYELONEPHRITIS.

P. W. Aschner, New York (*Journal A. M. A.*, Jan. 31, 1920), says that recently the pendulum of opinion has swung toward conservation of the diseased kidney in pyelonephritis, making decapsulation or nephrotomy the methods of choice. Some take a middle ground and are guided by the bacteriologic findings of the urine obtained with a ureteral catheter, choosing nephrotomy for the milder bacillary infections such as *B. coli* and *B. pyocyaneus*, and reserve nephrectomy for the coccus infections. He denies that any hard and fast rule can be relied on, and decision as to operation must be made from the patient's clinical condition, his estimated natural power of resistance and the margin of safety. It is evident, he thinks, that nephrotomy or decapsulation cannot effectually remove or drain the infected tissues, but can only relieve tension and engorgement. The operation doesn't remove the focus nor protect against extension and metastasis. The nicest clinical judgment is required, and a primary nephrectomy is by far the safest measure when there is severe septic absorption and renal insufficiency with nitrogen retention, and in long standing cases with loss of weight and strength. The margin of safety is small with these patients, and life must first be conserved. Two cases, illustrating these points, are reported. In one, primary nephrectomy caused the uremia to disappear and gave excellent functional results. The second case was fatal, the patient succumbing to peritonitis, either metastatic or by direct extension. Decapsulation had first been performed, followed by secondary nehprectomy, and the author believes the peritonitis was already present when nephrectomy was performed. If it had been performed at first, Aschner believes that the patient might have been saved.

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EDITORIAL

AS TO SENATE BILL 111—AS THE MATTER APPEARED IN OCTOBER, 1918.

ARGUMENT SUBMITTED AGAINST THE REPEAL OF THE MEASURE.

We ask the voters of Oklahoma to vote "No" on the proposition for the following reasons:

First: The House and Senate of the State Legislature and committees from each of them, studied the questions involved for many weeks, and, finally, by overwhelming majority in each house voted to require persons holding themselves out as chiropractic healers to undergo a long and proper study of the fundamentals of anatomy, bacteriology, surgery, obstetrics and other matters pertaining to the treatment of afflicted people before they should be licensed to practice any form of "medicine" in the State of Oklahoma. It should not be overlooked that all people understand the words "practice of medicine" to mean the assumption of the position of healer, adviser and treator of sick persons. The above law is now on our statute books and if you believe, Mr. Voter, in the protection of yourself, your family and our boys in the Army and Navy, vote "No" and permit the law to remain as the legislature passed same.

Second: Chiropractors in all states heretofore have declared that they did not believe in quarantine, vaccines, serums, antitoxins or drugs in the treatment of the sick. This position is invariably assumed by their leaders and instructors; that they did believe that all such measures could be supplanted by simple manipulations of the spinal column.

Third: We submit that heretofore all courts inquiring into their practices have determined that they are either spurious osteopaths or fakirs claiming to do

more by their measures than even the osteopaths themselves claim; that they set aside all teachings of scientists and the findings of scientists based on years of accumulated and endeavor study.

Fourth: Our present great Army and Navy and those of our Allies have been freed and kept free from typhoid fever, diphtheria, epidemic meningitis and many other infections, heretofore the greatest destroyers of soldiers in time of war by the use of quarantine serums and antitoxins, all of which measures the Chiropractics loudly and constantly declaim against as being poisonous and dangerous to mankind. Even the cattle, sheep, horses, hogs and dogs of our farmers are now protected against disease by the use of measures condemned by the Chiropractic profession.

We submit that if the Chiropractic profession is to be allowed to "Free Lance" among the sick men, women and children of our State, that the greatest wrong has been done our soldiers and sailors and those of our Allies in subjecting them to vaccination against typhoid, smallpox, paratyphoids and to administration of serum to cure them of meningitis and diphtheria; that the time is now here for the intelligent voters of Oklahoma to go on record against the lowering of standards of medical education already set up in other states.

Fifth: We call your attention to the fact that the law we seek to invoke is already adopted in most of the older states of the Union.

Sixth: The effort to set aside this law of the Legislature of your state is only an effort to permit illy prepared men and women to go out among the people, to hold themselves out as doctors, as capable of taking life and death in their hands and assuming the function of advisor in the greatest emergencies confronting the human being.

Seventh: We submit that before any person is allowed to assume the function of advisor to the sick, he or she should be required to undergo a long course of study and show their fitness to diagnose, recognize and treat disease before they are permitted to hold themselves out as such advisors.

Eighth: If the hogs and cattle of our farmers are kept free from disease by the use of vaccines and serums, it ill becomes any set of men to decry their use in the human being to prevent disease, and this in substance is exactly what the Chiropractic profession is attempting to do.

Ninth: We have no objection whatever to a person employing any school or system of medicine, treatment or healing he desires, but we do contend before anyone is allowed to assume that function, such person should be required to most arduously and intelligently study every phase of the human body, its peculiarities and ailments. Such restrictions are properly prescribed by the State as they are in other matters requiring scientific research. We believe our Legislature studied every phase of this matter in the weeks it was presented to them and that their act shou.d be sustained.

Tenth: Finally, we submit that this is a time when every theory, every procedure has an opportunity to be tried. We are in a world war and men are no longer moved by sentiment. The thing that can serve is used; that thing that cannot serve is cast aside. Proceeding upon that basis, the United States Army and Navy now have more than 30,000 doctors looking after the health of the boys who go out to fight for our country, but in neither Army nor Navy is there a single Chiropractor.

CLAUDE A. THOMPSON,
LEROY LONG,
JOHN W. DUKE,
O. J. LOGAN,
WARREN K. SNYDER,
A. L. WAGONER.

*In October, 1918, when the entire World was distracted by war, when Okla-

homa had in the uniform of army, navy and other departments, nearly 500 physicians, voluntarily serving their country, practices at home disorganized, with distraction the order of the day; then the Chiropractic, unserving, useless, a leech and fraud among a people stricken with the additional burden of a destructive epidemic of influenza, to the control or abatement of which he neither offered or contributed an atom of succor; then, appreciating the advantage to him in the absence of the most virile of our profession, was perfectly willing to submit to the people at the polls his attempt to repeal the law which proposed to force him to study at least as long as a nurse studies, no whining protest then came from him, but, today, October, 1920, two short years later, he is found striving by every means to induce Governor Robertson to withhold issuance of the proclamation ordering the referendum petition he initiated placed before the intelligent Oklahoma voter for decision. The law, as to referendums requires an argument to be submitted pro and con, which is published in one paper in each county of the state. We had in the office of Secretary of State at that time, a man who had himself signed the Chiropractic petition, had seen to it that argument of the Chiropractic was filed, but not one word, though in daily contact with your Secretary-Treasurer, then stationed at the Capitol and aware of the deep interest physicians naturally felt in the measure, was suggested that the very day had arrived when argument could be received for publication. The above, hurriedly written effort was the product of Dr. LeRoy Long and myself, obviously defective, but as a reminder of the tragedies of those days, as an index of the low character of the Chiropractor in general, who, in the very height of the epidemic's destruction, when no doctor had a moment for anything except alleviation of great distress, when scores of volunteers from lay ranks served as best they could to save human life, we find these ignorant non-productives emitting this whine:

> "On account of the Spanish Influenza epidemic . . . meetings are forbidden . . . we shall postpone . . . meeting of State Association until . . . the Medical Doctors *permit* us to meet."

The matter is reproduced at this time as a reminder of the conditions then existent, from which no effort is necessary to draw conclusions.—Editor.

OKLAHOMA'S EDUCATIONAL AND PROFESSIONAL REPUTATION AT STAKE.

After years of abortive attempt and endeavor we have finally come to the point where the Oklahoman must either ally himself in the ranks of refinement, culture, common sense and worth or retrograde to the level of ignorance, vulgarity and commonness. No other construction can be placed upon the verdict of the voter, who on November 2nd votes "No," thus sustaining the regulative act of 1917, or "Yes," which will repeal, render null and void the act which has for its purpose the very reasonable demand that those proposing the assumption of the gravely responsible and honorable function of advisor to the ill, as a learned profession, shall give evidence of study over a term of twenty-seven months. What an outrageous injustice! Why such requirement of one person, when the profession of medicine must first qualify to high degree as technically fit from the literary point, from the moral standpoint, then study **not less than four long years,** rapidly increasing among schools to five, then further fit himself by interneship of a year's duration? Why question the assertion of the pert ignoramus who insists that nine months is sufficient? Why require our trained nurses to master intricate details of that science and art, if an ignoramus can master a great science, and by short cuts, unknown to any other man of science, fit himself to assume responsibilities affecting human life with ability equalling—he will tell you superior to—that of the finished student?

In this some one is in error, very grave error. Either the entire fabric of the honorable, time-tested science of medicine as understood and interpreted by hun-

dreds of thousands of students in every clime and of every race and nationality is grossly wrong and fatally defective or the pretensions of a few hundred, illy prepared, if prepared at all, alleged students, judged by any standard of education and science, aside from medicine, most surely incompetent, inefficient, palpably immature as to fitness, if judged by standards applied to any other profession or calling, must be adjudged wrong.

We believe the intelligence and common sense of our citizen will not be found astray and bewildered in making his verdict. Largely he feels little or no interest in these matters, no more than you or I feel on matters of engineering, law, sculpture or painting, so it follows some one technically informed must advise him as we must be guided in problems not directly our concern. Only the doctor may do this with correctness. On that score hangs the responsibility of the Oklahoma Doctor for the result of the November elections. Experience shows that thousands of people disregard the special propositions submitted for their verdict, so in this case the doctor must make it his affair to advise the bewildered voter which should be a matter of very few moments. To a great degree the good name of your State is imperilled, certainly it will be dragged in the dust of scientific opinion if we furnish to the world the amazing spectacle of a great political body of more than two millions of people duped by the false argument, and clear absurdities submitted by the Chiropractics as fixed law and settled result of reasoning out a science.

The Oklahoma doctor and his friends have so many logical arguments and settled facts which may be presented to the uncertain that to the informed failure seems impossible, yet it is possible if the doctor fails to do his duty in properly leading his people to the right conclusion. No one holds a place higher in esteem than does the honorable doctor in the minds and hearts of his grateful patients and friends. Years of association in times of trouble bind the doctor inseparably to his own people; it is true, however, that to a certain extent the profession of medicine, that is the "other doctor" is not regarded with that respect which is really his due, so that brings us to the suggestion that each doctor "attend to his own business" in this matter. Do not fail to exert every possible atom of influence which you may properly do in your own sphere of influence, then we shall be able to proclaim to the world that our own Oklahoma is not a state whose preponderant constituent is clay, very common clay.

DOCTOR JOHN W. DUKE.

IN HIS MEMORY.

Dr. Duke, President of our Association, was born June 5, 1868, at Scobey, Mississippi, graduating in medicine from the University of Tennessee in 1891, after which he laid carefully his foundation for his future by post-graduate work in the University of New York, where he was Clinical Assistant from 1892 to 1893, later holding positions in Wards Island Hospital for the Insane and also in the Connecticut State Hospital. In 1898 he went abroad and continued his studies in Heidelburg, also visiting the different European medical centers.

Dr. Duke held many positions of trust during his lifetime. Notably, he was the only democrat that has, up to this time, been elected Mayor of his home town, Guthrie, showing conclusively the esteem with which he was regarded by his fellow-townsmen. Under one state administration, he served as Secretary of the State Board of Medical Examiners. Immediately following this appointment, he assumed the duties of State Commissioner of Health, also serving on the Western Oklahoma District Exemption Board throughout the war. He occupied the chair of Professor of Mental and Nervous Diseases in the Oklahoma University up to the time of his death. He was a delegate from Oklahoma to

the Democratic Convention at San Francisco and was the manager of the campaign for the Presidency of his close and personal friend, Senator Robert L. Owen.

Perhaps the greatest of his life's work was the establishment and maintenance of his sanitarium at Guthrie in 1909. Under his able direction, it grew to great importance. He was prominent in Masonic circles, having attained to the high station of a thirty-third degree Mason. Dr. Duke married Miss Isabel Perkins in New York in 1901. Besides his wife, he leaves a sister and brother in Mississippi.

What the medical profession thought of him, both personally and collectively, is best expressed by the inscription which appeared under his photograph published in the June Journal of the Association.

> "A Physician of the first class. Always a citizen of the first rank. Truthful, honest, and among the noblest of the land—a Man—whom we honor and revere."

By C. W. Heitzman.

Invisible domain—it lies so near!
Yet nothing know we of that dim frontier
Which each must cross, whatever fate betide.

From the day of his arrival into Oklahoma until the moment of his death, John W. Duke was indissolubly linked with the fortunes and the progress of this State and her people. Of him it can be truly said that "To such duty I, too, am born." If at any time during his long years of service as citizen and as physician he looked backward, it was only to look forward. While we are bowed down with mournful hearts, with eyes moistened, and the big drops steal down our cheeks, his sturdy virtues, his signal services, all his sterling qualities rush with full tide upon our recollections. When the word was flashed over the wires that John W. Duke was no more, it was so terrible that at first it stunned sensibility. The first feeling was the least.

Again we were brought to recognize our piteous helplessness. Other and common griefs belong to someone in chief; this belongs to all. In our unity of grief and indivisible fellowship of anguish we ask; is any man that ever was fit to live, dead? In this great State his dust shall rest, his memory shall live, a sacred treasure that shall serve to kindle anew our zeal and patriotism while the winds that move shall chant his requiem.

Others abide our question. Thou art free.
We ask and ask—Thou smilest and art still,
Out-topping knowledge.

By Robt. L. Owen.

He was my friend, devoted, unselfish and true. I first met him on a European trip and traveled through England, France and Germany with him in 1898, and was powerfully attracted to him because of his gracious and fine manner, his wonderfully handsome face and bearing, which I soon learned represented an intelligence of the highest order, a great brain and a great heart. He was a very learned man and was not surpassed as a psychologist in the United States. He was brave as a lion, but modest, generous, tender in sentiment and of very great nobility of character.

It was always a delight to be with him and I was profoundly honored in having his warm friendship and regard.

As Health Commissioner of the State of Oklahoma, the whole state will remember his weekly letters advising the people through the columns of four hundred newspapers how to protect themselves and their children from disease and how to

DR. JOHN W. DUKE

promote their health. No man in Oklahoma has been more useful than John W. Duke and no man better beloved by those who had the opportunity of knowing him well. He has honored his state by his life and has set a splendid example of fine citizenship; his memory can never die and his influence will live through the lives of thousands of others.

His spirit has departed from its beautiful earthly tenement—which was laid in its last resting place by loving hands at Guthrie, October 12th, 1920.

If every one to whom he had been kind had laid a blossom there, the mound would have been covered by a wilderness of flowers.

Till we meet again. Farewell!

By A. G. C. Bierer, Guthrie.

I counted Dr. Duke as one of my best friends whose passing away is like the taking of a brother. He and I have been most intimate in our friendship and associations for nearly twenty years. The State and this community have lost one of the best and ablest men who ever lived in it. His was one of those striking personalities, never to be forgotten. His countenance, shining with the noble spirit of the inner man, inspired confidence, esteem and trust. Better acquaintance with him increased these impressions. His simplicity was childlike, but his firmness that of a leader of men. His genius was in his intuition, both with human beings and with subjects with which he dwelt. His first impressions were seldom wrong and his final determinations were the result of a brilliant mind which had made thorough investigation of the subject at hand. He was the best and most convincing professional witness I ever saw on a witness stand, absolutely unperturbed, always careful in his answers and unmoved by any claim, however strongly presented, that he was wrong. I remember on one occasion, when in the midst of a trial wherein the defendant feigned insanity, he was asked by an old and experienced lawyer, with a book of one of the highest authorities open before him, whether the author, well-known to Dr. Duke, did not hold to a certain theory. Dr. Duke answered promptly "No." The lawyer read the supposed text, Dr. Duke denied that the author did. The lawyer in much spirit said, "I have read the text to you and it holds as I stated"; Dr. Duke, without a tremor, answered, "Judge, you have either unintentionally or deliberately misread that authority." The judge in heat handed the book to Dr. Duke, in confidence that the doctor was mistaken, and asked him to read it. The doctor read it, showed the lawyer had mistaken one word of the text and that it absolutely sustained Doctor Duke and disputed the lawyer's claim. It takes a man of thorough knowledge to do that, especially on a question as that one was, where there were medical opinions both ways. Doctor Duke's skill in his profession, however, was such that he was able to stand such a test.

I regarded Doctor Duke as one of the greatest alienists in the country and one of the most learned men in his profession. His citizenship was of the highest type, and while he was fond and firm in his love of his party, he was always first in his adherence to the highest principles. I think, though, the place where his faithful spirit shone the most was in his friendship for those he liked and cared for. This was illustrated in his friendship for our beloved Senator, Robert L. Owen. Just to look at their agreeable and pleasing and lovable association was always an inspiration to me and I have many times likened it in my mind to that of Damon and Pythias, and as the greatest illustration of that historic friendship. Doctor Duke, however, was a friend of everyone who was honorable and upright and believed in aiding the right and resisting the wrong, and I am sure that every friend of his in the State and in the Nation will say, as I feel at this moment, that in the death of Doctor Duke, he had lost his best friend.

His was a kindly heart, full of sympathy for the afflicted and distressed and

his patients at once were drawn to feel that their doctor not only had the ability to cure them of their sufferings but bore their sufferings with them.

He was a man of great learning; he had not only mastered the authors of his own profession but was well versed in all the arts, sciences, literature, government, and even in law; in fact, there was no subject of which he was ignorant, and he could join intelligently in the discussion of any subject, whether it be the most simple or the most profound.

He possessed the highest faculty of man—the ability to read the human heart from the human face, the ability to truly and unerringly measure the mental and moral worth and stature of a man.

He believed in the Fatherhood of God and the brotherhood of man, and himself a Prince, in the possession of mind and heart and soul and perfect manners, was as much at home and interested in the most lowly as those of the highest rank—none were too humble to be his associates and none were too high not to prize his friendship, and from those who knew him and associated with him in every rank of life, there will be but one verdict on his death and that is, that with his departure there was gathered into eternity a man of the highest intelligence, of the kindest and purest spirit and of the noblest soul.

By R. I. Williams, ex-Governor,
Judge U. S. District Court, Muskogee.

Dr. John W. Duke was a great man, both in heart and mind. He possessed in a highest degree the virtues of truth, love and friendship. Nothing sordid characterized his nature; but on the contrary he was both unselfish and chivalrous. Clean, gentle and as refined as a modest woman; but as to questions involving honor and principle he was aggressive and decisive in maintaining same. The medical profession and science has lost one of its most useful and distinguished members; the State one of its ablest, most useful and most loyal citizens. It will be difficult to replace him. Nature's molds do not produce in a State many men possessing so many virtues and at the same time filling such a wide field of usefulness during a single generation.

PERSONAL AND GENERAL NEWS

TULSA ACTIVITIES.

Dr. Bertha Margolin spent a few weeks at Colorado Springs.

Dr. T. A. Penny spent a few weeks in California this summer.

Dr. C. P. Linn has just returned from a few weeks visit to Hot Springs.

Dr. W. Albert Cook spent a few weeks at Greenlake, Wis., this summer.

Dr. Ross Grosshart spent a few weeks at Colorado Springs this summer.

Dr. W. W. Beesley visited Yellowstone Park and California this summer.

Dr. C. F. D. O'Hern has just returned from a two weeks stay in Chicago.

Dr. A. W. Pigford has just returned from a two weeks stay in Mississippi.

Dr. R. W. Dunlap has just returned from a few weeks visit to Southwest Missouri.

Dr. M. A. Houser has just returned from a six weeks hunting and fishing trip in Canada.

Dr. C. A. Dillon has just returned from a few weeks visit to the John Hopkins Clinic at Baltimore, Maryland.

Dr. Fred Y. Cronk visited his mother at Woodbine, Maryland, also the John Hopkins Clinic at Baltimore, Maryland.

Dr. G. A. Wall, Tulsa, will attend the Congress of Surgeons in Montreal and take in the clinics of various eastern cities during his trip.

Dr. J. S. Holland, Madill, visited the Mayor Clinic in August.

Hugo physicians are securing funds for the erection of a hospital.

Dr. W. E. Dixon, Oklahoma City, attended the Montreal meeting of American Congress of Surgeons, etc.

Dr. and Mrs. E. S. Ferguson, Oklahoma City, have returned from an extended vacation at Alexandria, Minn.

Dr. and Mrs. L. T. Gooch and daughter, Lawton, have returned from an extended trip to California points.

Dr. Ben C. Harris and family, Sapulpa, have returned from a motor trip to their old home in West Virginia.

Dr. and Mrs. Walter Hardy, Ardmore, attended the Montreal meeting of Congress of Clinical Surgeons of America.

Dr. John A. Roddy, Oklahoma City, was recently elected Grand Knight, Oklahoma City Chapter, Knights of Columbus.

Dr. R. E. Waggoner, Pawnee, is slowly recovering from an ankle injury which has incapacitated him for several months.

Dr. H. Coulter Todd, Oklahoma City, who had been spending his vacation in Los Angeles with his family, has returned.

Dr. J. W. West, Purcell, accompanied by his family, motored to eastern Oklahoma fishing centers for his August vacation.

Dr. W. W. Miller and wife, Gotebo, have returned from a motor trip through Colorado, Montana and other western states.

Dr. and Mrs. S. N. Mayberry, Enid, have returned after spending the summer at their summer cottage, Alexandria, Minn.

Dr. and Mrs. W. A. Aitken, Enid, have returned from an extended summer vacation spent at Cottonwood Lake, Colo.

Dr. F. B. Fite, Muskogee, spent the month of August motoring through Colorado, Montana and the Yellowstone region.

Dr. Rueben J. Dice, Randlett, and Burnice Throckmorton, of Anderson, Iowa, were married at El Reno, September 21st.

Dr. and Mrs. E. Brent Mitchell, Lawton, visited northwestern Arkansas resorts during the summer, motoring across the state.

Dr. W. B. Hudson, Yale, visited northern points in August, incidentally attending meeting of Nebraska State Medical Association.

Dr. L. A. Milne, Lawton, now stationed at Ft. Sill, Old Post, has been commissioned a Captain in the Medical Corps of the Regular Army.

Dr. E. E. Rice, Shawnee, visited Boston and other eastern cities and clinics on the occasion of entering his son at Harvard Medical School.

Dr. J. C. Baker, Port, announces his removal from that place and will enter the service of the National Oil Company with headquarters in the east.

Dr. H. T. Ballantine, Muskogee, registered the loss of a new five-passenger Dodge car by theft. The car was stolen from its berth in front of the P. and S. Hospital.

Dr. J. A. Muller, Snyder, recently swore out a warrant charging one J. Eastep, combination Baptist preacher and alleged healer, with practicing medicine without a license.

Dr. Hugh Scott, Oklahoma City, State Supervisor for Oklahoma, U. S. Public Health Service, is in Washington for a conference with the Surgeon General of the Public Health Service.

Dr. E. S. Lain, Oklahoma City, is preparing to make a trip to various Indian reservations for the purpose of making a special study of skin diseases supposed to be peculiar to the Indian.

Dr. James H. Cash, for many years located at Glencoe, has moved to Stillwater and will assume the location of Dr. W. A. Cleverdon who is preparing to leave Stillwater about November first.

The Oklahoma City Clinic announces, through Dr. D. D. Paulus, Radiologist, that the Clinic has secured a sufficient quantity of radium for use in treatment of those cases in which it is indicated.

Dr. Thomas W. Dowdy, New Wilson, accompanied by his family, visited Chicago and Mayo clinics in August-September. Dr. Dowdy purchased a new car while away, motoring via Colorado on his return trip.

Dr. F. P. Von Kellar, Ardmore, has filed suit against that city for personal injuries due to his automobile colliding with the street sweeper, which, it is alleged, had been left in the middle of the street without warning lights.

Drs. T. M. Alderhold and H. C. Brown, El Reno, announce formation of partnership which succeeds the firm of Drs. Hatchett and Aderhold, Dr. J. A. Hatchett retiring after many years of successful work with Dr. Aderhold.

Woodward had a wide "calling to the colors" in August on the occasion of a clean-up by sanitary inspectors. Several citizens contributed to the municipal fund as compensatio nfor allowing good honest old dirt to accumulate about them.

The Duke Sanitarium, Guthrie, announces that there will be no change in policy and management by reason of the death of Dr. Duke. Management of the institution will continue. as heretofore under Dr. C. B. Hill and Mrs. Duke.

DOCTOR SAMUEL M. HUNTER.

Dr. S. M. Hunter, whose death occurred at his home in Oklahoma City, August 31, 1920, was born at Alexandria, Alabama, 66 years ago July 19, 1920. Dr. Hunter spent most of his boyhood days on a farm near Duckton, Tennessee, leaving home after the age of twenty and working his way through medical school. He graduated at the Louisville Medical College in 1879. He followed his profession at Ducktown, Tenn., Hope, Kansas, and Merkle, Texas, prior to coming to Oklahoma City in the fall of 1901, where he had been practicing until the first of July, 1920. Several years ago Dr. Hunter served as Superintendent of Health for Oklahoma County. Immediately after his son, Dr. George Hunter, City Physician, entered the Army service in 1917, Dr. S. M. Hunter acted as City Physician for a while. Dr. Hunter leaves a widow and nine children.

DOCTOR CHARLES HENRY MAHAR.

Dr. Chas. H. Mahar, of Spiro, Oklahoma, died at the Sparks Memorial Hospital, Ft. Smith, Ark., August 19, 1920, from blood poisoning.

Dr. Mahar was born at Scranton, Pa., March 27, 1856, graduating from the Philadelphia School of Anatomy, February, 1881, later passing the Pennsylvania Board of Pharmacy, registering in that state, later in Kansas. He was married to Miss Bella B. Steele, at Harveys Lake, Pa., in 1882, three children being born to them. Dr. Mahar was a member of the Mehtodist Church, affiliating with that organization in his early youth.

Dr. W. T. Tilly, Muskogee, has opened his new hospital at 343 East Okmulgee Ave. The institution is formed by alteration of a rather large apartment house to which was added an entirely new building, making altogether 50-bed capacity. It is very well located on a wide street, convenient to car line and near the business district of the city.

Dr. Elizabeth Pearce, Boynton, has corrected an erroneous statement appearing in the August Journal and in the State press generally to the effect that the first woman to receive the degree of doctor of Medicine from the State University was Dr. Elizabeth Lehmer, Oklahoma City. That statement is not correct, as Dr. Pearce was the first woman to be graduated. Dr. Lehmer, however, received the highest grade on examination from the State Board of Medical Examiners.

The Funeral Cortege of Dr. John W. Duke, Guthrie, witnessed a touching exhibition of respect when the procession reached the site of the great three million dollar structure under erection by the Masonic fraternity, of which Dr. Duke attained the highest degree, that of the 33rd. To a man, including the stenographers and clerical force, they formed a silent, uncovered line of erect men and women, covering more than a block, giving testimonial of the high regard held toward their distinguished departed friend and ablest citizen.

Dr. A. L. Blesh, Oklahoma City, announces his resignation from the clinical staff of the University Medical Department. He will continue, however, the courses in didactic lectures heretofore given. The resignation was due to determination of the medical school to hereafter hold all student clinics at University and St. Anthony's hospitals. Dr. Blesh's clinics were held at Wesley Hospital, and due to lack of time his work would not permit of division.' Wesley Hospital announces that his regular Monday and Wednesday surgical clinics will continue under he and Dr. Stout. For this clinic Wesley Hospital makes a flat rate of $2.50 per day for a limited number of patients, which service includes x-ray and laboratory.

Rainey Mountain Indian School Buildings will be converted into hospitals for care of tuberculous soldiers and sailors and other beneficiaries, according to press dispatches, after certain preliminary surveys and inspections are made. If this institution is accepted and placed upon a practical and useful basis by the U. S. Public Health Service, the credit should be accorded Major H. Scott, Supervisor for Oklahoma, U. S. Public Health Service, more than to any other individual. Oklahoma citizens generally, and highly informed medical men in particular, regret that more provision cannot be made for the care of Oklahoma's ill and injured men. in their home state, by their home physicians and near the homes of their relatives and friends.

War Veterans suffering disabilities and illness due to the service are no longer sent to Base Hospital No. 25, Houston, Texas, but to the U. S. Public Health Hospital No. 35, at St. Louis. This very pleasing information heralds a new order to that effect, and certainly meets with the approval of all physicians conversant with the many discomforts of the Houston institution. Just why anyone persuaded those in authority to designate that delectable spot at Houston, in which our sick soldiers might swelter in the semi-torridity of the tropics, has never been explained to the satisfaction of those interested. While the cleaning process was going on, the clerical force of the Supervisor 14th District also had its promotion to Dallas; their new location is at Pacific and Akard Streets. Several other changes of lesser necessity and importance which would further improve the service have not yet been ordered but likely will be made soon.

Dr. T. H. Briggs and family, Atoka, visited Tennessee in August.

Dr. W. E. Lamerton, Enid, is visiting Boston and other eastern cities.

Dr. A. North, Bartlesville, visited the Great Lakes region on his vacation.

Dr. J. L. Blakemore, Muskogee, visited relatives in Virginia during August.

Dr. R. L. Hall and family, Pawhuska, visited Yellowstone Park for their vacation.

Dr. and Mrs. J. A. Milroy, Okmulgee, visited Hollister, Mo., on their summer outing.

Dr. Fowler Border, Mangum, attended the American Congress of Surgeons at Montreal.

Dr. J. C. Johnston and wife, McAlester, have arrived home after a motor trip to New York.

Dr. A. L. Stocks and family, Muskogee, motored to Colorado points in August-September.

Dr. H. M. Reeder, Shawnee, returned early in September from a postgraduate trip to Chicago.

Dr. C. E. DeGroot and family, Muskogee, visited White Sulphur Springs, Va., during the summer.

Dr. A. G. Cowles, Ardmore, is attending clinics in Chicago and will do special work in Cleveland.

Dr. and Mrs. Fred S. Clinton, Tulsa, made an extended trip to Pacific coast points during the summer.

Dr. E. B. Thomason, Healdton, has sold his interest in the Healdton Hospital and located in Duncan.

Dr. and Mrs. John Reynolds, Muskogee, visited the Montreal meeting of Congress of Clinical Surgeons.

The Southern Medical Association issues preliminary program for their annual meeting November 15-18, Louisville, Ky. The preliminary announcement gives notice of a formidable meeting, covering every phase of medicine; the first day being allotted to Southern States Association of Railway Surgeons; Southern Hospital Association; Southern Gastro-Enterological Association; National Malaria Committee (Conference on Malaria); Association of American Medical Milk Commissions; Conference on Medical Education and the Sections on Urology; Orthopaedic Surgery; Roentgenology; Obstetrics, with an evening dinner (informal banquet), the Association tenders Presidents and Secretaries of State Medical Associations and State Health Officers of the states comprising the Southern Medical Association. The above gives a faint idea of the magnitude of this meeting and evidences the great stride the organization has made since its organization. Remainder of meeting is allotted to every activity going to make success; sections; teas for visiting ladies, who are specially provided for by inclusion of social features; reception and dance; alumnae reunion dinners; scientific exhibits, moving pictures, etc., Secretary-Editor Seale Harris spares no effort to give the unusually complete program widest publicity. A symposium on nephritis Thursday afternoon, November 18, will be participated in by some of the leaders in internal medicine of the country.

MISCELLANEOUS

AN EXPOSE OF SHIFTY MEDICAL COMMERCIALISM BY THE SURGEON GENERAL OF THE ARMY.

(This statement indicates clearly the attitude far too prevalent on the part of exploiters of drugs for mercenary gain only. The mere fact that circulation of such matter is in the worst bad faith has no weight with such concerns; legally right is sufficient, the moral aspects have no place in their plan of existence.—Editor.)

LETTERHEAD OF
THE SURGEON GENERAL OF THE ARMY,
WASHINGTON.

September 7, 1920.

MEMORANDUM for the Surgeon General, U. S. Public Health Service:—

1. During the mobilization period in 1917 experimental use was made of the tube herein mentioned for troops who were so situated as to be denied the usual prophylactic procedure. The experiment was a failure, and it was promptly discontinued. As a result it has never enjoyed the approval of the War Department.

2. In payment for the tubes employed in this experiment, the Proventube Company received a Government check, facsimile of which they are now reproducing as an advertising medium. Legally, I suppose they have some right to do this, and, unfortunately, I know of no steps which the Government can take to prevent it, unless action is taken on the ground of fraud. In this case fraud must be established before we can act. I shall take up this question with the Interdepartmental Social Hygiene Board as soon as Dr. Storey returns.

3. Also, there might be some small chance of accomplishing something by placing the matter before the American Advertising Association, and I am now taking steps to bring this subject to their attention.

4. I agree with you that the use of this form of advertising constitutes a serious difficulty which must be overcome by those who are working to obtain the control of venereal disease. The system is vicious, but unless we can establish fraud, I fear it will be difficult to stop it.

M. W. Ireland,
Surgeon General, U. S. Army.

THE DUKE SANITARIUM, Guthrie, will have no interruption in service and management, all of which will continue under the control of Dr. C. B. Hill, who has long been connected with the institution, and Mrs. Duke and the remainder of the staff familiar with its problems and needs will continue in their respective situations as they were during the life of Dr. Duke.

COUNCIL ON PHARMACY AND CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

(The following articles produced by advertisers in this Journal have been accepted for inclusion with New and Non-Official Remedies by the Council on Pharmacy and Chemistry.)

NEW AND NONOFFICIAL REMEDIES OF OUR ADVERTISERS.

Sterile Solution of Lutein—H. W. D. Each cubic centimeter contains the water-soluble extract of 0.2 Gm. lutein—H. W. D., freed of protein in physiological solution of sodium chloride. For a discussion of the actions and uses of ovary preparations, see New and Nonofficial Remedies, 1920, p. 201. The solution is supplied in the form of Ampules Sterile Solution of Lutein—H. W. D., containing 1 cc. Hynson, Westcott & Dunning, Baltimore.

Ovarian Residue—H. W. D. The residue from the fresh ovary of the hog, after the ablation of the corpus luteum. Ovarian Residue is used for the same conditions as the entire ovarian substance, but is claimed to have the advantage of being somewhat more stable. Ovarian Residue—H. W. D. is supplied in the form of 5-grain tablets only. Hynson, Westcott & Dunning, Baltimore (Jour. A. M. A., Aug. 7, 1920, p. 378.)

Tablets Anterior Pituitary-Armour, 5 grains. Each tablet contains 5 grains of desiccated pituitary substance (anterior lobe) Armour (See New and Nonofficial Remedies, 1920, p. 207). Armour & Co., Chicago.

Tablets Ovarian Substance-Armour, 5 grains. Each tablet contains 5 grains of Ovarian substance-Armour (See New and Nonofficial Remedies, 1920, p. 202). Armour & Co., Chicago.

PROPAGANDA FOR REFORM.

Digitalis Therapy. Thanks to the development of appropriate methods of physiologic assay, digitalis preparations can now be evaluated in terms of their real potency, and products can be prepared which are stable and constant as the pharmacopeial standards demand. Physicians have learned, largely through the leadership of Cary Eggleston, how to estimate digitalis dosage on the basis of body weight. As the possibility of overdosage can be recognized by the occurrence of symptoms such as nausea, or by the electro-cardiograph, it becomes possible to push the dosage speedily to the limit of tolerance, with corresponding therapeutic advantage. There remains however, the important need of differentiating more clearly the patients for whom digitalis is actually indicated (Jour. A. M. A., Aug. 7, 1920, p. 417).

Internal and External Antisepsis. Despite the numerous efforts to demonstrate the efficacy of this or that chemical agent or drug as a gastro-intestinal antiseptic, the outcome has been that the supposed benefits were due to catharsis in most instances rather than to any real effect upon the bacteria in situ. Similarly, J. F. Norton, in an investigation made for the Council on Pharmacy and Chemistry, has shown that the value of "antiseptic" and "germicidal" soap depends on the soap and not on the antiseptic or germicide contained in them. In fact, ordinary toilet soap and the green soap used by surgeons was more efficient, evidently because the added antiseptics and germicides interfered with the lathering qualities of the soap (Jour. A. M. A., Aug. 14, 1920, p. 478).

The Bethlehem Laboratories, Inc., Preferred Stock. Physicians in various parts of the country have received advice that they have been selected to share in the profits of the Bethlehem Laboratories Inc., New York City. The company claims to control the manufacture of hyclorite, a product accepted by the Council on Pharmacy and Chemistry. These physicians are given an option to purchase four shares of the company's stock for four hundred dollars. The directorate of the Bethlehem Laboratories, Inc., is stated to be composed of business men of Bethlehem, Pa., the president of the General Laboratories, Madison, Wis., a "prominent physician" of Bethlehem, and J. Ray Reilly, Philadelphia, a "prominent Philadelphia surgeon and consulting chemist to several large manufacturing drug concerns." Hyclorite, manufactured by the General Laboratories, Madison, Wis., was accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies because at the time thati t was considered, it was marketed in accordance with the Council's rules. The investment proposition which the Bethlehem Laboratories makes to physicians is an insult to decent medical men. When physicians are interested in products they prescribe or recommend, the public does not get a square deal. It is against public interest and a degradation of scientific medicine for physicians to be financially interested in the products they prescribe (Jour. A. M. A., Aug. 14, 1920, p. 493).

Quinin and Urea Hydrochlorid for Local Anesthesia. Quinin is a protoplasmic poison, and tissue necrosis may be caused by strong solutions of quinin salts. That this deleterious reaction actually

does occur and has mitigated against the general use of quinin and urea hydrochlorid is confirmed by the report of the Committee of the A. M. A. on the Advantages and Disadvantages of Local Anesthesia in Nose and Throat Work. The committee reported that the only local anesthetic that produces edema and sloughing is quinin and urea hydrochlorid. The committee found that, as this local anesthetic has been abandoned in other fields of medicine, so it has been discarded for use in nose and throat operations. Two physicians who had published articles extolling the value of quinin and urea hydrochlorid in nose and throat operations now state that they have discontinued its use, though they had not published this unfavorable conclusion (Jour. A. M. A., Aug. 21, 1920, p. 559).

Value of Schick Test. The Schick test, which can readily be applied to a large number of persons, makes it possible to differentiate those immune from those susceptible to diphtheria. It also facilitates the attempt to increase the number of the immune by suitable prophylactic toxin-antitoxin injections. By the use of the Schick test and toxin-antitoxin injections, institutions have been kept free from cases of diphtheria for years (Jour. A. M. A., Aug. 21, 1920, p. 545).

Sukro-Serum and Aphlegmatol. About two years ago, American newspapers contained accounts of an alleged cure for pulmonary tuberculosis "discovered" by Prof. Domenico Lo Monaco of Rome, Italy. Reports indicated that this so-called Italian Sugar Cure for Consumption consisted of the intramuscular injection of solutions of sucrose (saccharose—cane sugar). Now the Council on Pharmacy and Chemistry reports on two proprietary preparations based on the "sugar cure" which are being exploited in this country: Sukro-Serum and Aphlegmatol. Sukro-Serum is marketed by the Anglo-French Drug Company. A circular issued by this company described Sukro-Serum as a "STERILIZED SOLUTION of lacto-gluco-SACCHAROSE." By reading this circular to the end, however, one learns that "Sukro-Serum" is not a "serum" in the ordinary sense, but apparently it is a solution of ordinary sugar (sucrose). Aphlegmatol is sold by G. Giambalvo & Co. The circular enclosed with a package of this preparation contains the following, with reference to the composition: "A solution of Hydrates of Carbon after the formula of Professor D. Lo Monaco, Director of the Institute of Physiological Chemistry of the University of Rome. Contents: *Sucrose* ($C_{12}H_{22}O_{11}$) *Glucose and Galactose* ($C_6H_{12}O_6$)." The preparation was found to contain a reducing substance, probably glucose, amounting to about 7.4 per cent. After hydrolysis, 55.5 per cent of glucose was found. The advertising for Aphlegmatol appears to be the work of those ignorant of the English language. These two preparations appear to be nothing more than concentrated solutions of sugar. It is probable that a small amount of cane sugar might be inverted into glucose and fructose, but experiments have shown that cane sugar subcutaneously administered in the small amounts used in this instance is largely excreted in the urine unchanged. Less is known about galactose, but the evidence available would indicate that galactose is largely excreted in the urine unchanged when given subcutaneously. Glucose would be absorbed as such, and the amounts under consideration, used by the system much the same as when given by mouth (Jour. A. M. A., Aug. 21, 1920, p. 556).

I. G. O. According to Dr. H. S. Lambdin, Peru, Kansas, I. G. O. is: saturated solution of iodin gas in petrolatum at 130 degrees with oil of eucalyptus. The heat of the body liberates the iodin and it is absorbed as free iodin. The A. M. A. Chemical Laboratory reports tnht the sample of I. G. O. was a black ointment, green in thin layers, with a slight odor like crude petroleum, containing but 0.59 per cent of free iodin (Reports of the A. M. A. Chem. Lab., 1919, p. 106).

NEW BOOKS

Under this heading books received by the Journal will be acknowledged. Publishers are advised that this shall constitute return for such publications as they may submit. Obviously all publications sent us cannot be given space for review, but from time to time books received, of possible interest to Oklahoma physicians, will be reviewed.

THE DUODENAL TUBE.

The Duodenal Tube and its Possibilities, by Max Einhorn, M. D., Professor of Medicine at the New York Post Graduate Medical School; Visiting Physician to the Lenox Hill Hospital, New York City. Octavo of 122 pages with 51 illustrations. Philadelphia and London. W. B. Saunders Company 1920. Cloth, $2.50 net.

The author, a pioneer in the subject he presents, has shown no little ingenuity and perseverance in the contrivance of apparatus and in the prosecution of his researches.

As he suggests, the study of the duodenal secretion is but in its infancy. It is possible, nay probable, that the future in this field may add much to the knowledge of the pancreatic secretion, and to the diagnosis and treatment of the diseases of the pancreas and of the neighboring organs.

In the meantime the nature of the subject is such that its elucidation and application will perforce remain in the hands of the few who have the time and the facilities not possessed by most physicians.

R. H. B.

TWO GOOD LOCATIONS for general practitioner—$4000.00 or $5000.00 business. Near surgical center. Address "C. C.", care State Medical Journal. 6-20